

RESEARCH ARTICLE

Construction workers work-life balance: A tool for improving productivity in the construction industry

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Abstract: This paper examines the relationship between construction workers work-life balance and productivity in the construction industry in Ghana. Survey method was adopted where 200 Questionnaires were administered to small and medium construction firms and 150 response were obtained. Canonical correlation analysis (CCA) was also carried out to establish the relationship between the predictor (WLB) and criterion latent variable set (Productivity). It emerged that there is a relationship between construction workers work life balance and productivity in the construction industry. This work strives to engender a wider academic debate and renew the need for work life balance policies that will enhance productivity to be revisited. Management of construction organisations must develop and implement construction workers work-life balance polices at their place of work.

Keywords: construction workers, construction industry, Ghana, productivity, work-life balance

1 Introduction

Work-life balance (WLB) is a concept that aim at achieving a balance between the stress of employees, families and their work-life. It is an integration between work and life such that both do not interfere with each other^[1]. A balanced work life is the lack of opposition between work and other life roles or the state of equilibrium in which demands for personal, professional and family life are equal^[2]. Whereas Amstad *et al.*^[3], claim WLB is the separation between work life and personal life of an employee in an organization,^[4] describe it as the boundary that one creates between a professional life, career advancement, personal life or any other segment that makes up the life of an individual. Greenhaus *et al.*^[5], claim it's the extent to which an individual is equally engaged in and equally satisfied with his or her work role and family role. For Clark^[6] it's a satisfaction and good functioning at work and at home with minimum role conflict'. Similarly, Kirchmeyer^[7] suggests it's about achieving, satisfying experiences in all life domains, and

to do so requires personal resources such as energy, time, and commitment to be well distributed across domains.

Organizations within the construction industry are complex and often changes in structure due to geographic mobility with sectorial and economic instability. Construction organizations are also characterized with long working hours and mostly with males as the dominant employees. As such, the construction sector has not yet attracted the needed attention of researchers in terms of understanding the relationship between WLB and productivity in the construction industry. It is probably due to characteristics such as male workers being able to withstand both work and family pressures as well as societal pressure among others^[6]. Notwithstanding, the construction sector is one of the most stressful industries due to the nature of activities and long working hours culture. There is therefore the need for construction organizations to have WLB policies in place in order to increase employee's productivity. Developing and implementing WLB policies will also decrease individual's health workers risk^[7]. For instance, prior studies have shown that people who take their vacations and annual leaves are much more productive than those who do not^[8]. Moreover, the inability of employees to detach themselves from work comes with symptoms such as burnout, which impact on their well-being and productivity.

Inevitably, WLB policies improves the health of the individual and encourages healthy choices and helps the body and the mind to be able to work effectively to increase productivity^[9]. In Bird^[10] opinion, WLB boosts productivity by teaching people how to schedule an equal

Received: June 1, 2020 Accepted: June 16, 2020 Published: June 18, 2020

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Citation: Apraku K, Bondinuba FK, Eyiah AK, *et al.* Construction workers work-life balance: A tool for improving productivity in the construction industry. *Social Work and Social Welfare*, 2020, 2(1): 45-52.

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number of hours for each day for work and personal activities. Research has also linked job schedule demands to construction professionals' family functioning in other jurisdictions. For instance, hours worked per week were negatively related to marital satisfaction and positively related to the marital conflict in a survey by Australian civil engineers^[11]. According to Mordi *et al.*^[12], WLB drive employees for personal and organizational satisfaction and therefore increase productivity. Asiedu-Appiah^[13] also concludes that WLB is important in enhancing employee performance at work and home.

Although extant literature has demonstrated a significant understanding of the phenomenon of WLB, most of these studies are concentrated in emerged economies among the white- or blue-collar employees than in emerging economies with black collar employees^[8, 14, 15]. However, there are both cultural and socio-economic issues that are quite distinct in these economies. As argued earlier extant literature on the subject is very scanty in the construction sector in Ghana. This paper therefore aims to establish the relationship between construction workers WLB and productivity in Ghana. The paper adopts a quantitative research strategy and is structured into six sections. Section one introduces the subject of WLB and its importance. Section two describe WLB policy typologies and their effect on employee's productivity in the construction sector. The research methodology adopted is also describe in section three and four contains the findings. The implications of the study and the conclusions are in section five and six respectively

2 Work-life balance and productivity in the construction industry

The working time of an individual is dictated by the person's employment contract or the organization commitments whereas family time is purely the discretion of the individuals^[16]. McCann^[17] then suggests that the clash of time in these two aspects creates an imbalance in two directions. Thus, work life interference tends to dominate the family life. Most at time work and home activities are conflicting with each other making it difficult to create a boundary between the two. It is incumbent upon the construction worker and their employer to discover flexible solutions to increase productivity notwithstanding sacrificing the welfare, safety and personal life of employees. These flexible solutions can be in the form of WLB policies or initiatives that aim at balancing employees work and family life at the same time increasing productivity.

WLB policies include the worker right to take leave from the job^[18], be able to take part-time working hours^[19, 20], having access to flexible job schedules^[21],

access to school bus or free transport for employees children's and wards to school^[20, 22], transport for workers to and from work^[18, 20] among others. Leave for instance includes parental leave, time off from work to care for dependents, annual leave, maternity leave extensions, paternity, and adoptive leave^[18]. WLB policies work as a reward to the voluntary and optional efforts put up by employees. Good and sustainable WLB policies can reduce negative spill-over from the lives of employees in the construction sector. It can be done by reducing the long working hours and tiredness that are characteristics among construction workers. It also has the potential of decreasing the rate of stress and ensure a healthy and safe workplace to achieve an accident-free environment^[23].

In the context of construction organizations, can use any of the above stated WLB policies to reduce work-life conflict and induce organizational commitment that will results in high productivity. To the construction organization, WLB will help improve commitment, and better teamwork and to the individual employee, more value, balance in daily life and work and reduce stress^[24]. Stevens *et al.*^[26], conclude that WLB programs or policies have different effects on employees. Darcy *et al.*^[25], also believe that WLB policies are closely connected to staff motivation, commitment and retention, which impacts on an organization's productivity and overall performance. On the other hand, WLB policies benefit not only employees by way of higher job satisfaction and better health, but also benefits employers by decreasing absenteeism and turnover, increased motivation, productivity and performance^[26]. Construction organizations can implement various WLB policy initiatives that can assist employees to better balance their work and family responsibilities, gain improvements in well-being and provide organizational benefits. Besides what has been stated in paragraph two of this section, these family friendly policies can include but not limited to job sharing, telecommuting, work to life conflict, on-site childcare facilities among others.

Productivity on the other hand in the construction context is described in terms of performance factors^[27], production rate^[28], unit person-hour (p-h) rate^[29] among others. However, Orando^[30], defines it as the ratio of the input of an associated resource to real output. Thus, creating an economic value with the associated input resources. Productivity therefore is the physical progress achieved per person per hour. It is measured by the effectiveness and efficiency with which labour is used in the construction process and how labour is used in doing what it is required to do at a given time and place.

The factors of construction productivity can be categorized into human and management related factors. Whereas the human related factors include staff motiva-

tion, skills development, communication, organizational culture, leadership, loyalty, commitment^[30] and the individual attributes^[29] the management related factors are concern with quality of supervision, material management, site planning, constructability, change management^[29] among others. These two classes of factors affect the morale and motivation of individuals which ultimately influence productivity directly^[29,30] and affect the entire organization. This study concentrates on the human related factors of productivity that are likely to be affected by WLB variables. It is also because WLB is the separation between work life and personal life of an employee in an organization. Therefore, the relationship between employees work and personal life factors in terms of productivity is very important. Unfortunately, research in this area is very limited particularly in developing countries.

Prior studies have linked job schedule demands to construction professionals' family functioning. For instance, allowing construction workers to have some flexible working hours in Kotey and Sharma^[31], view will allow them to be able to determine the start and end times of their working day life. WLB policies will therefore give workers some ample time to attend to pressing family needs^[21]. Moreover, transport for workers provided to reduces lateness will eventually lead to high productivity. It will guarantee the safety of workers and makes them feel recognized^[18,20].

Furthermore, granting construction workers annual leaves on the other hand will release employees from work stress and create a balance between work and their life activities. Such type of WLB strategy as suggested by Christopher^[32] will help employees to perform other duties outside work, which will create a balancing effect between their work, personal and family life activities (Lazar, *et al.*, 2010).

Part-time arrangements are another strategy that can allow construction workers with health problems, disabilities or limited disposable time^[33] such as students on internships among others to participate in the labour force in the construction industry and develop their skills and obtain work experience^[20]. Although part-time working hours or employment can be unsatisfactory for most employees who prefer working longer hours to increase their income, in the European working conditions survey by^[19] it emerged that 85% of employees working less than 30 hours per week were satisfied with their WLB. However, those working less than 35 hours a week reported the lowest levels of both physical and psychological health problems.

The provision of a free bus system for employees' wards to school and back from school can be another strategy to improve productivity in the construction sector.

Although, many construction organisations will consider such a strategy as having toll on their finance, it will reduce lateness to work^[20], help workers get a sound mind and work to increase productivity^[22].

Telework or telecommuting in the construction sector can be very difficult to implement but for administrative and office workers it is possible. It involves doing at least some of their regular work from home instead of going to the office. However, most construction activities are on-site activities. Telecommuting will help employees earn more income and increase productivity in the construction industry (Lazar, *et al.*, 2010).

3 Research approach

The study adopts a quantitative approach with the use of survey questionnaires. Questionnaires were largely used as an instrument for data collection because it makes deriving large amount of data from a considerable population possible and efficient^[34]. The questions had to be expressed in a way that could be comprehensible by the subjects. It was tested by experts, resulting in adjustments where necessary. The choice of this type of methodology is not new to the academic field of human resources management^[35]. The questionnaire consists of four sections. The first two sections describe the features and demographics of respondents. The other sections considered the relationship between WLB and productivity in the construction industry. The five-point Likert scale was adopted as the measurement.

Due to challenges in obtaining a comprehensive list of D1K1 to D4K4 contractors and consulting firms operating in both Ashanti and Brong Ahafo regions of Ghana, the non-probability sampling technique was adopted for the investigation. Purposive, convenience and snow balling techniques were adopted, where managing directors, senior project managers, construction workers of government construction agencies and private construction and consulting firms were used to reach the unit being investigated. A total of two hundred (200) questionnaires were deposited at the offices of various construction agencies and consulting firms and 150 were received representing 88%. Out of the 150 questionnaires received, 30 were unable due to errors among others. In all, 94% (n = 112) were male and 6% (n = 8) of the respondents were females. The ages of the respondents ranged between 20 and above 50 years. All respondents were working in construction organizations that are within class D2K2 and D1K1 category of contractors in the country.

A reliability analysis was carried out to ascertain whether the scale chosen reflects the constructs being measured. It is an aspect in which two observations under

Table 1 WLB strategies and productivity variables

WLB Policies	Code	Source	Productivity	Code	Source
Part-Time Work	PW	Parent-Thirion, 2007 ^[19] ; Ueda, 2012 ^[39]	Staff Motivation	SM	Burke, 2000 ^[26]
Flexible Working Hours	FH	White <i>et al.</i> , 2003 ^[38] ; Kotey and Sharma, 2016 ^[31]	Skills Development	SD	Dozzi and AbouRizk, 1993 ^[29] ; Orlando, 2013 ^[30]
Leaves and Vacations	LA	Lehnert, <i>et al.</i> , 2014 ^[40] ; Gregory and Milner, 2009 ^[8]	Communication	CM	Dozzi and AbouRizk, 1993 ^[29] ; Orlando, 2013 ^[30]
Flexible Job Schedule	FS	Hayman, 2009 ^[21]	Organizational Culture	OC	Dozzi and AbouRizk, 1993 ^[29] ; Orlando, 2013 ^[30]
School bus for wards	SW	Watts, 2009 ^[22] ; Warren, 2004 ^[20]	Leadership	LS	Dozzi and AbouRizk, 1993 ^[29] ; Orlando, 2013 ^[30]
Transport for Workers	TW	Warren, 2004 ^[20] ; Guest, 2002 ^[18]	Loyalty	LT	Dozzi and AbouRizk, 1993 ^[29] ; Orlando, 2013 ^[30]
Telework	TL		Commitment	CT	Orlando, 2013 ^[30]
telecommuting	TC	Lazar <i>et al.</i> , 2010			

Source: Authors' construct, 2019

study that are equivalent to each other in terms of the construct being measured also have the equivalent outcome. The Cronbach's alpha tests was used to assess whether the survey was reliable. An acceptable Cronbach alpha value of, which indicates high level of internal consistency is recommended^[36]. Cronbach alpha value below in, suggest that the data is unreliable. **Table 2** showed a high level of internal consistency of the data with a Cronbach's alpha of 0.939 for the productivity variables and 0.833 for the WLB variables. It means that all the items sufficiently measure both productivity and WLB in the context in which they were described.

Table 2 Reliability statistics for both productivity and WLB factors

Variables	Item Code	Mean	Std Deviation	Cronbach's α
Productivity (Criterion) Variables				
1	Staff Motivation	SM	2.40	0.803
2	Commitment	CT	2.60	0.803
3	Loyalty	LT	3.80	1.171
4	Skills Development	SD	3.20	1.840
5	Leadership	LS	3.40	1.024
6	Organizational Culture	OC	3.00	1.420
7	Communication	CM	3.60	1.024
WLB (predictor) Variables				
1	Telework	TL	1.60	0.803
1	Telework	TL	1.60	0.803
2	Part-Time Work	PW	1.80	1.171
3	telecommuting	TC	1.60	0.803
4	Flexible Job Schedule	FS	4.00	0.889
5	Transport for Workers	TW	2.80	1.332
6	Flexible Working Hours	FH	4.00	0.635
7	Leaves and Vacations	LV	2.80	1.476
8	School bus for wards	SW	2.40	0.803

Source: Field Survey, 2019

3.1 Canonical correlation analysis

Canonical correlation analysis (CCA) was also carried out to establish a relationship between the predictor (WLB) and criterion latent variable set (Productivity). The initial consideration was to determine the number of canonical functions to be included for interpretation. As CCA usually generate as many functions (i.e variates) when there are variables in the smaller dependent variable set (TL, PW, TC, FS, TW, FH, LV and SW), the analysis derived four canonical functions.

Whiles all the four-test as showed in **Table 3** returned statistically significant results at the 0.05 level, the study

adopts the most common test which is the Wilks' lamda (λ). Wilks' lamda often tend to have the most general applicability^[37]. For the full model, Wilks' λ is 0.773, $F(16,430.70) = 2.422$, $P < 0.002$. Thus, the null hypothesis that there is no relationship between the two latent variable sets ($R_c = 0$) can be rejected. That is, there is a probable relationship between the WLB (predictor) (TL, PW, TC, FS, TW, FH, LV and SW) and the productivity (criterion) variables (SM, CT, LT, SD, LS, OC, CM and IA) across all the four functions.

Table 3 Multivariate test of significance

Test Name	Value	Approx. F	Hypoth.DF	Error DF	Sig. of F
Pillai's	0.2355	2.2978	16.00	589.00	0.002
Hotelling's	0.2831	2.5223	16.00	570.00	0.001
Wilks'	0.7729	2.4226	16.00	430.70	0.002
Roy's	0.2731				

Source: Field study, 2019

3.2 Calculating the effect of the relationship

It should be noted that statistically significant results can be impacted heavily by sample size, such that small, unimportant effects can be found statistically significant given large enough sample sizes. Effect size in CCA can be determined by Wilks' λ , which represents an inverse effect size, or the amount of variance not shared between the variable sets^[37]. Therefore, by subtracting this amount from 1 provides us with an overall effect size, that is, the amount of variance shared between the variable sets ($1 - 0.773 = 0.227$ for the full model). Taken together, the results indicate that the entire model is both statistically significant and has what may be considered a moderate effect size. It's only those functions that explain a reasonable amount of variation between the two latent variable sets should be interpreted. Considering the squared canonical correlations (Sq. Cor), as shown in **Table 4**, it is clear that only the first function with Sq. Cor (0.195), which explained 19.5% of the variance within its function should be retained for interpretation.

Drawing inference from the results presented in the dimension reduction analysis as shown in **Table 5**, it can be seen that the full model (Functions 1 to 4) is statistically significant, with a Wilks' λ of 0.773, $F(16,430.70)$

Table 4 Eigen values and canonical correlations

Root No	Eigenvalue	Pct	Cum.Pct	Canon.Cor.	Sq. Cor
1	0.241	84.78	84.78	0.40	0.195
2	0.037	13.05	97.83	0.18	0.035
3	0.005	1.75	99.58	0.06	0.004
4	0.012	0.45	100.03	0.33	0.001

Source: Field study, 2019

= 2.422, $P < 0.002$. The cumulative effect of functions 2 to 4 and 3 to 4 are neither statistically significant nor the effects of the function in isolation. They would therefore not be retained for interpretation. In summary, it can be concluded from the analysis that there is indeed a noteworthy canonical relationship between the two latent variable sets. Thus, the predictor variables set of WLB has a relationship with the criterion variables of productivity in the construction industry. This conclusion is based on the statistical significance of the relationship, the effect size, and amount of variance explained within each function in the model. Moreover, this relationship is largely captured by the first function in the canonical model as shown in Table 4.

Table 5 Dimension reduction analysis

Root Nr	Wilks L	F	Hypoth.DF	Error DF	Sig. of F
1 to 4	0.736	2.434	16.00	430.70	0.002
2 to 4	0.985	0.698	9.00	353.05	0.758
3 to 4	0.859	0.225	4.00	291.00	0.295
4 to 4	0.989	0.174	1.00	147.00	0.766

Source: Field study, 2019

4 Discussion

The study revealed that most of the respondents are aware of the importance and benefits of WLB policies in their respective companies. In terms of the most important and influential predictors, respondents are of the view that flexible job schedules and flexible working hours are the most influential predictors with a mean score of 4.0 each. For instance, FwH has the potential of allowing workers to meet family or personal commitments and emergencies at home. It will also enable employees to respond to both predictable and unpredictable circumstances concerning their family and work life. Meeting external family needs in terms of participating in family gathering such as attending funerals, weddings and other family reunions are rated highly among Ghanaians. An employee that has such an opportunity through flexible job schedule or working hours scheme will be satisfy and work hard to be given such an opportunity again in future.

Furthermore, flexible job schedule can enable employees to enroll on part-time and weekend programmes and courses to improve their skills and knowledge. These skills sets would be used for the betterment of the con-

struction organisations in the long run. flexible job schedule can also encourage job rotation among employees which will ensure knowledge sharing among employees. It will also build a strong organizational culture among staff of the company.

They are followed by transportation for workers, leaves and vacations with a mean score of 2.80 each. Transportation for workers, leaves and vacations have significant relationship on their performance and productivity in the construction industry. Their mean values indicate that they have a positive effect on employees performance and productivity when implemented in a construction organization. It can be argued that the provision of transportation benefits to their workers stand to gain competitive advantage over their counterparts. A construction organization benefits by attracting and retaining its workforce, minimizing payroll taxes, expanding working hours, building a reputation as an environmentally and worker friendly organization. Construction organisations can achieve the aim by supporting ridesharing as a strategy to reduce the economic effect of commuting by construction workers.

Another strategy is to maximize the benefits of partnering with other businesses or with transportation management associations such Ghana Private Roads Transport Union among others in Ghana to design company specific transportation solutions for construction companies in the country. Such partnership will support Ghana's local transit systems and community's economic development goals by motivating construction workers to use public transportation. The ultimate effect will mean giving construction workers with more disposable income to invest in their communities. It will also have a positive effect on the environment by reducing the carbon footprint and encourage construction workers to riders to work to improves their quality of life.

Leaves can be in the form of a study leave, sick leave, annual or care leave. In the case of a study leave, it is given to any staff member who is undertaking an approved study course for a period of time. In the construction industry training leave is often the ideal form of leave where training is given to an employee for self-development and organization development. It helps such workers to gain more knowledge which is plough back into the organisations to help increase productivity. Sick leave on the hand is the time set off from work that an employee can use to address their health and safety needs without losing their pay for that period. Employee checking their health and safety needs can help them gain enough strength to work and increase productivity in the construction industry since construction is energy demanding in nature. In annual leave situation the paid leave for the purpose of

recreation to which employees become entitled after a period of qualifying service or employment with a particular employer. Furthermore, when employees are granted career's leave to take time off to take care of an immediate family or household member who is sick or injured or help during a family emergence can be very motivating for such a worker to work hard.

The results are a confirmation that part-time work policy within the construction sector can facilitate re-entry into the workforce for those who have had career breaks, people who have stayed at home and to also provide a gradual exit for employees getting close to their retirement. part-time work policy has the potential of maximizing the use of human resources and increase operational flexibility, by providing additional coverage during peak periods. Another most important WLB policy is the provision of school bus or transport system for employees' wards and childrens as a flexible means of easing their family life and commitments. It emerged that the provision of free transport or bus system to construction workers wards is a known WLB within the Ghanaian construction industry. However, the degree at which such a policy has been was not well established. Notwithstanding, it will prevent an employee having a divided mind while working on site as to when and who to pick his or her ward. It will therefore reduce stress and sometimes lateness on site.

From the results it can be stress that flexible working time as suggested by^[31,38] part-time work hours^[20], flexible job schedules^[21], school bus or free transport for employees children's and wards to school^[20,22], transport for workers^[18,20] among others has been acknowledged by this study as WLB policies adoptable by construction organisations in Ghana. The resultant effect of these policies is staff motivation as claimed by^[26], skills development, communication, organizational culture, leadership, loyalty, commitment^[30], individual attributes^[29]. These often lead to increase productivity in the construction industry. The above findings and discussions are a confirmation that there is a relationship between WLB policies and productivity in the construction industry. Implementing such policies can lead to high productivity although majority of construction form seldom implement such policies.

5 The implications for policy, theory and practice

Two main implications emerged from the paper. Firstly, the paper emphasizes on the importance of WLB policies in advancing construction business productivity from a developing country perspective. The expanded knowl-

edge and information therefore provided can be useful in the development of the construction industry from a developing country's perspective.

The second implication is closely linked with the role of the construction business environment in ensuring conducive family cohesion whiles increasing productivity of employees in the industry. However, the industry constraints in the form of lowest evaluated bidder concept in construction contracts procurement, often compel construction businesses to forgo such an important aspect in their overheads pricing. Such a challenges have systematic effects on employees, employers and the industry in developing countries.

6 Conclusions

It can be concluded that WLC policies have a positive impact on the performance of the industry. That is when WLC policies are implemented in various companies, it will help to increase productivity of the company's concern. The absence of WLC policies in construction organisations can causes low turnover of workers. The company should take care of employee's workload to balance the work life. Construction organizations that consider the uniqueness and pay attention to workers WLB policies and programs are likely to reduce workers family work conflict and therefore can increase productivity in these organisations.

In this regard, good communication and understanding of the wider impact of WLB policies on construction productivity needs to be at the heart of stakeholders and policy makers in the construction sector in developing countries. Although, the data analyzed are likely to help provide valuable insight into the specific causes of low productivity in the construction industry, there are some limitations that deserve attention. The small sample size might be viewed as a limitation. The absence of additional demographic information about construction organization ownership structure might also be considered as limitations.

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