



Job Crafting and Entrepreneurial Innovativeness: The Moderated Mediation Roles of Dynamic Capabilities and Self-initiated AI learning

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Abstract

Purpose – This paper investigates the moderated mediation roles of dynamic capabilities and self-initiated AI learning between job crafting and entrepreneurial innovativeness among owner-managers of family craft businesses in Ghana.

Design/methodology/approach – A convenience sampling technique was used in the selection of 498 family craft business owner-managers in Ghana. The paper deployed regression analysis to examine the hypothesized paths.

Findings – Using hierarchical regression, job crafting was found to have a positive effect on entrepreneurs' innovativeness. Further, dynamic capabilities moderate the mediated link between self-initiated AI learning and entrepreneurial innovativeness.

Research limitations – The current study self-initiated learning for work adjustment from a cross-sectional design perspective. Though, this research design is effective in the assessment of opinions and attitudes of persons, it is limited in its capacity to reflect changing opinions and attitudes overtime. This study recommends future studies to conduct a longitudinal survey on the phenomenon.

Originality/value – This study is one of the first to deploy AI affordances to extend empirical literature on the novel SIWAL concept for work adjustment among craft family business owner-managers in Africa.

Keywords – Job crafting, Self-initiated AI learning, Dynamic Capabilities, Entrepreneurial innovativeness, Ghana

Introduction

Globally, self-driven initiatives for job design re-engineering (job crafting) is steadily gaining academic and practitioners' attention in recent years (Oh *et al.*, 2024; Saleem *et al.*, 2024). This increasing research interest may be attributable to the quest for workers to align skills sets with fast-paced and ever changing market demands (Meera and Vinodan, 2024). Capacity to undertake job crafting is a consequence of social learning processes and social network interactions among workers. According to the social learning theory (SLT) (Bandura, 1977), cognitive and behavior modification is underpinned by reflection, demonstration and mimicking of processes or people. This paper adds that self-driven learning initiatives have been strengthened by the advent of digital tools such as artificial intelligence and simulations (Cárdenas-Muñoz *et al.*, 2024; Sawang and Kivits, 2024; Xu *et al.*, 2023). Thus, the paper posits that digital tools are critical pillars that complements job crafting for skills upgrade among craft workers.

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3 Although, research in career development projects the relevance of a better cognitive
4 appreciation of means through which job crafting influences entrepreneurial outcomes such as
5 orientation, motivation and productivity (Boesten *et al.*, 2024; Miao *et al.*, 2023). Nonetheless,
6 very little empirical literature exists on how artificial intelligence (AI) drives entrepreneurial
7 innovativeness among craft workers. First, career development scholars examining the relation
8 between job crafting and entrepreneurial innovativeness (Apasieva *et al.*, 2024; Hernaus *et al.*,
9 2023), lean towards the assumption that self-driven initiatives are reinforced by leadership and
10 organizational supports. Second, the plausible tension between craftsmanship and industrial
11 production is much evident among family craft businesses. Further, these firms are deemed as
12 custodians of traditions, hence have the proclivity to resist change due to professional routines that
13 are grounded in cultural norms and value systems (Rondi *et al.*, 2024). Consequently, studies on
14 craftsmanship in recent years have highlighted the need to advance literature beyond nostalgic
15 crafts and social imaginaries (Bell *et al.*, 2021; Liu, 2023).
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21 The paper argues that current literature on craftsmanship have not sufficiently addressed
22 contemporary strategic fits and their concomitant issues among craft firms, particularly in Africa.
23 For example, in Lesotho, Rantšo (2022) unearthed that despite technological support through
24 governmental interventions, craft workers continue to use manual methods to perform routine
25 tasks. Premised on this assumption, this paper examines ways in which digital evolution has
26 shaped job crafting and innovation among craft family business owner-managers in Ghana.
27 Further, the paper explores the moderated-mediation roles of dynamic capabilities and self-
28 initiated AI learning within context. The paper is grounded in both effectuation theory (EFT) and
29 contingency theory (CTT). The paper makes 3 unique contributions. First, the empirical piece adds
30 to the body of knowledge on career development literature (Jones, 1994) by moving beyond
31 traditional ways of job crafting. The paper advances knowledge through the investigation of digital
32 technologies for self-driven learning among craft workers. Thus, the study establishes relevance
33 of artificial intelligence in optimizing job crafting for entrepreneurial innovativeness (Miao *et al.*,
34 2023). Second, the paper advances knowledge on the importance of digital transformation for
35 optimized commercialization and competitiveness among traditionally entrenched craft oriented
36 family businesses (Zapata-Cantu *et al.*, 2023). Third, by giving consideration to learning culture
37 among firms, the paper highlights the capacity of learning through digital affordances in delivering
38 firm innovativeness. Accordingly, the paper projects an entrepreneurial strategy that touts digital
39 platforms as a learning mechanism (Upadhyay *et al.*, 2023) for re-shaping craft workers skills to
40 align with the increasing changing market dynamics.
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48 **Literature review and Hypothesis development**

49 ***Craft work***

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52 Over the years, craft workers have been commonly referred to as custodians of historical
53 artifacts. These professionals are largely driven by intrinsic desires to preserve professional
54 business lines rooted in traditional heritage. Notwithstanding the deep seated traditional
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3 approaches deployed by these artisans in routine operations, several scholars have pointed out
4 incapacity to industrialize as their gravest drawback. Several contemporary studies in
5 entrepreneurship have called for craft businesses to embrace standardization for the purposes of
6 commercialization. Thus, strengthening the assertion that artistry practices are “constructed by
7 grappling with tensions between collectively imagined pasts and futures” (Kroezen *et al.*, 2021, p.
8 524). This study argues that industrialization of craft businesses is a paradigm shift from primary
9 emphasis on aesthetics to product utility (Kroezen *et al.*, 2021; Rondi *et al.*, 2024). Further, the
10 study draws on effectuation and contingency theories to explain job crafting processes and firm
11 innovativeness through digitalization. The study notes that although there exists some scanty
12 literature on commercialization of craft businesses (Barisone, 2020; Roy and Sarkar, 2024),
13 nonetheless, self-driven learning through digital affordances for innovativeness among craft
14 workers has not received much research attention. The study draws on regression based analysis,
15 which allows data to identify key linkages between job crafting, self-initiated AI learning, dynamic
16 capabilities and innovativeness among craft entrepreneurs.
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22 ***Job Crafting***

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24 Job crafting is a concept that describes a person’s proactive capabilities to make
25 modifications to professional work routines in order to stay afloat with contemporary trends and
26 prevailing market demands. Strongly rooted in the self-determination theory, job crafting is
27 associated with cognitive and behavioural capacities of a worker to identify problems and provide
28 innovative solutions (Cárdenas-Muñoz *et al.*, 2024). In a contemporary dynamic business setting,
29 the concept reflects the need for entrepreneurs to acquire new skills and competencies through
30 learning. Thus, job crafting reflects the capacity of an entrepreneur to extend task boundaries, alter
31 relational restrictions, and modify cognitive limitations of a job (Mousa and Chaouali, 2023). The
32 current study contextualize job crafting from the perspective of Bizzi (2017). The scholar posits
33 that task-related competency development is a product of an individual’s social networking
34 capabilities.
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39 ***Entrepreneurial Innovativeness***

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41 According to the social cognitive theory (SCT), workplace behaviors such as
42 innovativeness are deemed as products of individual intentions and socio-structural conditions.
43 SCT projects the relevance of social engagements with industry actors as a prerequisite for
44 professional growth, career development and firm success (Yarberry and Sims, 2021). Baregheh
45 *et al.* (2009) asserts that “innovation is the multi-stage process whereby organizations transform
46 ideas into new/improved products, services or processes, to advance, compete and differentiate
47 themselves successfully in their marketplace” (p. 1334). Thus, igniting a need for the creation of
48 an enabling environment that is conducive for craft family firm innovativeness. This study argues
49 that creating a conducive environment for entrepreneurial innovativeness has been enhanced
50 through the advent of digital technologies (Felicetti *et al.*, 2024). Digital platforms and tools such
51 as artificial intelligence, machine learning and social media have contributed significantly in
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3 expanding the frontiers of idea creation, incubation and implementation of contemporary business
4 models among family businesses (Begnini *et al.*, 2023). Notwithstanding these noteworthy
5 contributions, the adoption of digital technologies among craft family businesses for the purposes
6 of industrialization has not received much research attention in entrepreneurship literature.
7 Accordingly, this study finds this gap in literature worthy of investigation.
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10 ***Effectuation Theory***

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12 Effectuation theory is a cognitive tool that describes entrepreneurs' decision making
13 patterns in contexts of market uncertainties and demand fluctuations (Sarasvathy, 2008).
14 Effectuation is 'a logic of entrepreneurial expertise, a dynamic and interactive process of creating
15 new artifacts in the world' (p. 8). The scholar adds that effectuation theory is underpinned by 5
16 main assumptions (Klenner *et al.*, 2022). The first assumption highlights the explorative
17 capabilities of an entrepreneur, and projects the acquisition of educational knowledge, professional
18 experience, social networks and individual mastery as key to realizing this fit. Second, the theory
19 extols the relevance of risk mitigation through the use of micro incremental modifications in
20 product innovation. Third, the theory highlights the need for entrepreneurs to build innovative
21 capabilities through business ecosystem learning across the globe. The fourth assumption thrives
22 on the capacity of entrepreneurs to identify and explore opportunities in contingencies and
23 unexpected events for sustainable performance. Finally, the fifth assumption posits that
24 entrepreneurs must harness non-predictive tendencies as a source of potential future opportunities
25 for firm growth.
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32 Effectuation theory has been deployed practically to explain tenets of responsible
33 entrepreneurship (Uzhegova and Torkkeli, 2023), responsible innovation (Coffay *et al.*, 2022), and
34 succession planning among firms (Bloemen-Bekx *et al.*, 2023). Relying on the central theme of
35 logic in the effectuation theory, this study argues that human action is a critical factor in the
36 determination of innovative initiatives in any artistry venture. Nevertheless, some scholars argue
37 that effectuation theory is at its nascent stage, hence has not received the requisite empirical
38 backing to harness its full potential in literature (Alsos *et al.*, 2019; Cowden *et al.*, 2022). This
39 assertion is also stated in the work of McKelvie *et al.* (2019) who concede that 'effectuation has
40 not been adequately adopted in extant literature thus far - and certainly has not been exhaustively
41 empirically tested' (p. 27). Based on the pragmatic decision-making limitations of the effectuation
42 theory, this study extends its scope by integrating the assumptions of contingency theory of
43 management.
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49 In the seminal writing of Luthans and Stewart (1977), the scholars posit that 'general
50 contingency theory' draws its cognitive roots from the 'open system theory' of organizations. The
51 scholars add that contingency theory highlights the importance of environmental elements, as well
52 as, resource and managerial sub-systems that shape decision-making in firms. The current study
53 attempts to draw boundary conditions on the universal application of effectuation theory by
54 premising practical decision-making processes on natural dynamics and fluctuations in market
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3 conditions (Kamble *et al.*, 2023). Additionally, the study extends effectuation theory through
4 contingency theory to explain relevance of techno-structural ‘fit’ for innovativeness among craft
5 family businesses (Miller and Rollnick, 1991).
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7 ***Job Crafting and Entrepreneurial Innovativeness of Craft Businesses in the Era Digital*** 8 ***Transformation*** 9

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11 Can craft family business owners redesign their jobs through sustainable innovative
12 practices? This question implies an invitation to revisit the effectuation theory of innovation
13 (Sarasvathy, 2001) and contingency theory (Luthans and Stewart, 1977) to verify how these
14 cognitive underpinnings converge to transmit measures of job crafting into entrepreneurial
15 innovativeness in a fast paced digitalized business environment (Heider *et al.*, 2022). Effectuation
16 theory suggests that an individual (entrepreneur) should possess spectrum of qualities such as
17 explorative prowess (Klenner *et al.*, 2022), and ability to recognize and convert situational threats
18 into new opportunities (Cowden *et al.*, 2022). By extending the effectuation theory through the
19 lens of contingency theory, this study asserts that craft businesses’ techno-structural adjustment is
20 a requisite for developing proactive behaviors for innovativeness (Tomas *et al.*, 2023).
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25 Digital technologies represent a mechanism through which a pool of innovative ideas and
26 business models could be hatched to address rapidly changing market dynamics. Authors such as
27 Rondi *et al.* (2024) note that craft entrepreneurs are commonly seen as proactive and self-
28 motivated in performative efforts, pursuing routine operations with both perpetual tradition and
29 large-scale commercialization in mind. According to contingency related effectuation theory,
30 capacity of a firm to innovate is contingent on strategic fits that are rooted in resources and
31 managerial systems for decision-making (Miller and Rollnick, 1991). The study advances
32 argument that craft entrepreneurs who appreciate the relevance of business sustainability through
33 innovation are likely to be committed to upgrading and reengineering of skills through self-driven
34 learning culture. Based on the arguments advanced, the study hypothesizes that;
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39 *H1. Job Crafting has a positive effect on Entrepreneurial Innovativeness*
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41 ***Mediating Role of Self-Initiated AI learning*** 42

43 Self-initiated work adjustment for learning (SIWAL) is a concept that describes workers’
44 effort to continuously acquire and intensify learning of work dynamics in order to bridge gaps
45 between changing skills prerequisites and actual skills learnt at any given time (Dawis, 2005).
46 Though relatively new, the SIWAL concept is well grounded in a meta-analysis conducted by
47 Zhang and Parker (2019) to determine peculiar job characteristics favorable for workplace
48 learning. This study further extends literature on SIWAL by exploring the role of artificial
49 intelligence (AI) in promoting self-driven initiatives to learn and acquire skills. AI offers
50 entrepreneurs opportunity to learn through simulations, virtual realities and simplified automated
51 digital affordances. Further, the study notes that empirical literature has established AI affordances
52 as a positive predictor of organizational outcomes such as employees’ creative self-efficacy and
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3 affective commitment (Kim *et al.*, 2024; Yang and Zhou, 2022). However, the study asserts that
4 despite some level of scholarly attention by researchers on technology enhanced workplace
5 learning, there is scanty empirical evidence on SIWAL through AI affordances, prompting the
6 need for scholarly exploration. Further, there has been growing concerns among entrepreneurial
7 researchers on understanding the multifaceted interplay between job crafting, self-initiated AI
8 learning and entrepreneurial innovativeness. This interrelation is particularly salient in sensitive
9 economic sectorial areas such as family businesses, where deployment of digital tools can
10 substantively influence industrialization and sustainable performance. The study jointly deploys
11 effectuation and contingency theories to explain relevance of contemporary situational factors for
12 skills development among craft business owners.
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17 Based on the contingency extended version of effectuation theory, the study asserts that
18 universal application of the theory is restricted by boundary conditions. Hence, there is a need to
19 introduce factors that influence craft entrepreneurs practical decision-making processes. The study
20 argues that AI affordances create the requisite setting that connects job crafting and entrepreneurial
21 innovativeness. This study proposes self-initiated AI learning as a mediator to elucidate on the link
22 between job crafting and entrepreneurial innovativeness. This leads to the development of the
23 second hypothesis;
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27 *H2. Self-initiated AI learning mediates between job crafting and entrepreneurial innovativeness*

28 ***Moderating effect of Entrepreneurs' Dynamic Capabilities (DC)***

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31 Extant literature has shown that dynamic capability is a major predictor of entrepreneurs'
32 innovativeness. Dynamic capabilities relate to a firm's dexterity to incorporate, advance and
33 reengineer internal and external know-hows in response to speedily evolving market conditions
34 (Gupta *et al.*, 2024; Teece *et al.*, 1997). Further, the study embraces the notion that configuring a
35 firm's DC is a contingent strategic fit to gain and sustain competitive edge under conditions of
36 market turbulence and rapid digital evolution. DC pertains to a firm's ability to anticipate through
37 innovative learning cultures, entrepreneurs' heuristics and the internalization of new ideas (Hevi
38 *et al.*, 2024; Ismail, 2024). The current study draws on both effectuation and contingency theories
39 to explore the moderating role of dynamic capabilities among family businesses engaged in craft
40 works. These assertion is premised on capacity of DC to techno-structurally improve an
41 entrepreneur's innovativeness. Although, extant literature highlights the relevance of dynamic
42 capabilities in advancing sustainable growth among craft family businesses (Canale *et al.*, 2024;
43 Liboni *et al.*, 2023), it fails to substantially address use of self-initiated AI learning for job crafting.
44 The study explores this gap in literature by assessing the moderating role of dynamic capabilities
45 between self-initiated AI learning and entrepreneurial innovativeness. Therefore, the study
46 conjectures that;
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53 *H3. Dynamic capabilities moderate the link between self-initiated AI learning and entrepreneurial*
54 *innovativeness*
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Methodology

Participants and procedure

The research empirically assesses hypothesized model linking job crafting, self-initiated AI learning, dynamic capabilities and entrepreneurial innovativeness among owner-managers of craft family businesses in Ghana. The research sampled opinions from owner-managers of family businesses that engage in craft works in Ghana between the months of March and June 2024. Selection of research area was guided by the following reasons. First, commonly classified under SME category, family businesses are a major economic driver in several countries including Ghana (GhanaWeb, 2020). Second, SMEs account for 70-90% of Africa's economic growth; contributing 70% of GDP; responsible for about 80% of employment; and constitute a major hub for the realization of reduction in poverty as enshrined in Sustainable Development Goals (SDG) (AER, 2019). Thus, family businesses provide a good sample size for better appreciation of concepts that relate to job crafting, self-driven learning through digital affordances, as well as, entrepreneurs dynamic capabilities and innovativeness.

A convenience sampling technique was employed in administering a total of 655 questionnaires, however 498 valid responses were retrieved, representing 76.0% response rate. Merits of this sampling method includes limited accessibility challenges, and readiness of respondents to voluntarily participate in completing the self-administered questionnaires (Creswell, 2014). Questionnaires were adapted for response collection in quest to achieve the study objectives. Further, SPSS version 23 was employed for the statistical analyses. The questionnaire was pre-tested with 32 business owners based on Preneger *et al.*, (2014) recommendation. The scholars conjectured that 30 respondents would produce 80% high power. Accordingly, the pre-test results revealed that the study respondents understood the questions. Lastly, the study addressed risk of possible common method variance (CMV) by using the Harman single factor test (Podsakoff *et al.*, 2003). The test outcomes reveal that no single factor 'variance explained' was greater than the threshold mark of 50 percent (see Table I). Thus, there was no risk of CMV in the study.

Measures

A five-point Likert-type scale with anchors (1) strongly disagree to (5) strongly agree was used to gather responses on all the constructs. The description of the scales are given below.

Job Crafting (JC). A 20-item Combined Job Crafting Scale (CJCS) by Bizzi (2017) was employed. Within context, CJCS refers to desire by craft entrepreneurs to take up activities that modify routine task structures. An item on the scale reads; "I eager to prospect new developments, hence I am one of the first to discover novel trends in my field of work".

Dynamic Capabilities (DC). A 14-item scale adapted from Teece (2007) was used. Context-wise, DC refers to an entrepreneur's capacity to rely on internal resources to take

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3 advantage of current market trends through learning and planned change. An item on the scale
4 reads; “I keep abreast with universal best practices in my field of work”.

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6 Self-initiated AI Learning (S-AI). A 7-item SIWAL scale adapted from Van Ruysseveldt
7 *et al.* (2021) was used. Context-wise, self-initiated AI learning refers to an entrepreneur’s intrinsic
8 desire to acquire modern skills through artificial intelligence affordances. An item on the scale
9 reads; “I use AI affordances to get a better grasp of my work”.

10
11 Entrepreneurial Innovativeness (EI). A 20-item scale adapted from Hurt *et al.* (1977) was
12 used. EI refers to deliberate effort by entrepreneurs to create and implement novel ideas that have
13 the propensity to promote firm success. An item on the scale reads; “To draw global consumer
14 appeal, I often modify my craft works through new approaches”.

15
16 *Control variables.* Age, gender, education and industry type were controlled in the current
17 study. The control variables were selected based on demographic and contextual factors, drawing
18 empirical support from a study undertaken by Shah, *et al.* (2022). Thus, the controlled variables
19 made a significant impact on entrepreneurial innovativeness.

20 21 22 23 24 **Results**

25 26 ***Psychometric Properties of Measures***

27
28 Exploratory factor analysis (EFA) was conducted with a benchmarked eigenvalue fixed
29 above 1 to test the scales. The EFA scores for all items of JC, S-AI, DC and EI met the data
30 sufficiency threshold value of 0.07 (Hair *et al.*, 2017). Accordingly, 41 out of 61 items loading
31 satisfactorily. The dataset was subsequently tested for robustness to establish goodness-of-fit (Hair
32 *et al.*, 2010).

33 34 35 ***Sampling Adequacy Tests***

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37 KMO scores for principal estimation of the dataset of the constructs, ie. JC, S-AI, DC and
38 EI = 0.839; and explained 68.763% of variance in the model ($0 > \alpha < 1$), accordingly suitability of
39 the data was established. With regards to sampling correctness, all the study constructs’ *p-values*
40 of Bartlett’s test of sphericity ($\alpha < 0.05$) were significant.

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43 **(Insert Table 1 here)**

44 45 46 ***Reliability, Validity and Correlation Analysis***

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48 In reference to internal consistency of the study constructs, the following loadings were
49 recorded; JC = (α 0.851, CR 0.974); S-AI = (α 0.807, CR 0.933); DC (α 0.829, CR 0.966) and EI
50 (α 0.886, CR 0.979). This implies that each construct established, hence, reliability and composite
51 reliability was established ($\alpha > 0.7$) (Nunnally and Bernstein, 1994). Further, the study concludes
52 that convergent validity was established because each construct’s average variance extracted
53 (AVE) has (α -value > 0.5). Finally, square root of each construct’s AVE was greater than
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3 correlation coefficients among the research's constructs, thus, confirming discriminant validity
4 (Fornell and Larcker, 1981).
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7 **(Insert Table 2 here)**

8 ***Measurement and Structural Model***

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10 The statistics measurement model recorded is illustrated as follows (χ^2
11 = 487.323, $df = 358$, $p = 0.001$), the other indices include; (CFI = 0.993, NFI = 0.998, TLI
12 = 0.991, GFI = 0.994, RMSEA = 0.003), indicating good fit of the model.
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15 ***Demographic characteristics and Test of normality***

16
17 The survey is made up of 3 demographic characteristics captured by the study. They are
18 gender, age, and education levels. Gender was dominated by males with 59.24%. The age range
19 was dominated by 38-47 bracket with 36.55%. Respondents' educational level was predominantly
20 degree holders with 60.04%. Finally, 62.65% of the respondents belong to the service industry
21 classification. Test of normality was verified through the Kolmogorov-Smirnov and Shapiro-
22 Wilk's test (Pallant, 2007). The p -values for all the constructs were greater than the α -value of
23 0.05 (Pallant, 2007); this meant that the data was normally distributed. Multicollinearity was
24 addressed by using only correlation coefficients which were not above 0.80 (Hair *et al.*, 2010).
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28 ***Moderated-Mediation Model***

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30 The study deploys a moderated-mediation model to assess the extent to which job crafting
31 (JC) relates to entrepreneurs' innovativeness (EI) through self-initiated AI learning (S-AI). First,
32 the study findings unearth that job crafting significantly predicts self-initiated AI learning ($b =$
33 0.151 , $SE = 0.041$, $t(498) = 3.671$, $p < 0.001$), and entrepreneurs' innovativeness ($b = 0.296$, $SE =$
34 0.031 , $t(498) = 9.558$, $p < 0.001$) accordingly, the study confirms H2a and H1 respectively. Also,
35 self-initiated AI learning positively predicts entrepreneurs innovativeness ($b = 0.287$, $SE = 0.084$,
36 $t(498) = 3.396$, $p < 0.01$) accordingly, confirming H2b (see Fig. 1).
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41 Second, the research assesses the mediating effect of self-initiated AI learning between job
42 crafting and entrepreneurs innovativeness. Mean estimate of the indirect effect of job crafting on
43 entrepreneurs innovativeness via self-initiated AI learning was ($b = 0.014$, $SE = 0.006$) with [95%:
44 $LL 0.004$, $UL 0.026$]. Accordingly, mediating effect of self-initiated AI learning between job
45 crafting and entrepreneurs innovativeness was confirmed (H2) (see Fig. 1).
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49 Third, the research explores moderating effect of dynamic capabilities (DC). Precisely, the
50 assessment was conducted to establish linear and interaction effects of self-initiated AI learning
51 (S-AI) and dynamic capabilities. The outcome shows that interaction term S-AI*DC positively
52 predicts the relationship between S-AI and entrepreneurs innovativeness ($b = 0.090$, $SE = 0.030$,
53 $t(498) = 2.996$, $p < 0.01$), thus confirming H4. Furthermore, the conditional and total effects from
54 S-AI to entrepreneurs' innovativeness were assessed against specific moderator values of dynamic
55 capabilities (DC) ($M \pm 1 SD$) (see Fig. 1). Research outcomes show that all indirect effects were
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3 significant within $\pm 1 SD$. Thus, demonstrating that the prediction of entrepreneurs' innovativeness
4 by self-initiated AI learning is probable within the dynamic capabilities range of $M \pm 1 SD$; and
5 that the indirect effect from self-initiated AI learning to innovativeness is higher for entrepreneurs
6 with higher dynamic capabilities compared to entrepreneurs with lower dynamic capabilities.
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9 **(Insert Figure 1 here)**

10 **Discussion and Conclusion of findings**

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13 This paper explores direct and indirect effects between job crafting, Self-initiated AI
14 learning, dynamic capabilities and entrepreneurial innovativeness among craft family business
15 owner-managers in Ghana. The finding shows that job crafting positively predicts entrepreneurs'
16 innovativeness. The study infers that task redesign is a prerequisite for commercializing craft
17 works, which hitherto were principally focused on the preservation of professional traditional
18 heritage. The outcome is a testament to related empirical works, which have reasonable
19 explanation that if craft entrepreneurs redesign routine task activities in-line with contemporary
20 standards, then they will harness the benefits of efficiency and consumer appeal (Rondi *et al.*,
21 2024; Sharma and Nambudiri, 2020). Furthermore, the study asserts that job crafting is a
22 demonstration of proactive behaviors that are beneficial to entrepreneurs in times of market
23 uncertainties. These behaviors help craft entrepreneurs to generate and implement novel ideas that
24 may help a family business to gain competitive edge in a global market. Given this, the study
25 concludes that job crafting contributes to innovativeness among craft family business owner-
26 managers in Ghana.
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32 Also, job crafting was found to be positively linked to self-initiated AI learning among
33 craft entrepreneurs in Ghana. The study infers that craft entrepreneurs' proactive task behaviors
34 may be ignited through self-driven AI supported learning. AI affordances provide the requisite
35 virtual learning platforms for upgrading knowledge and skills in task performance. The study
36 asserts that AI affordances deliver benefits such as modification and synergizing of task activities,
37 reduction of waste and elimination of errors (Duan *et al.*, 2023; Xu *et al.*, 2023). The study result
38 confirms that job crafting is facilitated through self-initiated AI learning among craft
39 entrepreneurs. This result confirms studies conducted by (Nguyen and Nguyen, 2024), as well as
40 (Waldkirch *et al.*, 2021), where workers leverage on digital affordances to modify task boundaries
41 in order to harness opportunities for firm growth. Ensuing, the effect of self-initiated AI learning
42 on entrepreneurs' innovativeness was established as significantly positive. This result corroborates
43 earlier studies undertaken by Upadhyay *et al.* (2023), as well as, Nguyen and Nguyen (2024),
44 where AI affordances was established as a positive predictor of entrepreneurial innovativeness.
45 Separately, both studies emphasize the relevance of artificial intelligence improving product
46 development and general task performance. The study posits that a craft entrepreneur's openness
47 and desire to engage AI affordances for skills upgrade is good a starting point for incubating and
48 implementing novel ideas.
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3 The mediation hypothesis demonstrates that self-initiated AI learning acted as a mediator
4 between job crafting and entrepreneurs innovativeness. The outcome signifies that self-initiated
5 AI adequately explains the link between job crafting and entrepreneurs innovativeness. This
6 assertion highlights the intervention role AI affordances play in equipping craft entrepreneurs with
7 modern competences in response to rapidly changing market dynamics and increasing
8 hypercompetitive demands. This result corroborates extant works undertaken by Alemayehu and
9 Chen (2021), as well as, Sahibzada *et al.* (2020), where self-inspired and technology enhanced
10 creative learning was proven as a mediator between task proactivity and innovativeness. On
11 separate accounts, both studies emphasize the relevance of self-directed learning through digital
12 affordances as a major bridge that connects redesigning and reenergizing of work activities and
13 innovativeness. Consequently, the study infers that craft entrepreneurs' positive attitudes toward
14 acquiring new competences through AI affordances help shape their skills sets for firm
15 innovativeness. Capacity of self-initiated AI learning to mediate between job crafting and craft
16 entrepreneurs innovativeness in the study is grounded in both effectuation and contingency
17 theories.
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24 Regarding outcome of the moderation effect, the interaction term 'S-AI*DC' moderates
25 between self-initiated AI learning and entrepreneurs innovativeness. This outcome renders
26 empirical support to earlier related works, where dynamic capabilities was proven as a moderator
27 between proactive behaviors and entrepreneurial innovativeness (Fernandes *et al.*, 2024; Lu *et al.*,
28 2023). As a result, it is rational to state that capacity of 'S-AI*DC' to moderate between self-
29 initiated AI learning and innovativeness could be explained by craft entrepreneurs' agility, social
30 networking, intrinsic motivation and digital competency (Chatterjee *et al.*, 2023; Hindrawati *et al.*,
31 2023).
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35 ***Implications and Conclusions***

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37 The study makes several theoretical contributions to SME literature in general and craft
38 focused family businesses literature in particular. First, the study extends literature on cognitive
39 limitations of effectuation theory by integrating contextual relevance (contingency theory) into its
40 practical application. The study makes an intellectual claim that although market externalities may
41 pose considerable threats to craft entrepreneurs, it is imperative for these businesses to analyze
42 their situational contexts before decisions are taken. Second, the study extends literature on the
43 concept of self-initiated work adjustment learning (SIWAL). Despite being a novel concept in
44 organizational studies, SIWAL has not received much research attention in organizational and
45 entrepreneurial literature. Henceforth, the current study examines SIWAL from the perspective of
46 AI affordances for knowledge upgrade. Thus, the study addresses a key challenge identified in the
47 meta-analysis conducted by Zhang and Parker (2019), where the authors made a call for future
48 studies to explore links between organizational learning and self-driven initiatives. Second, the
49 study advances knowledge on contingency theory (CT) by deploying its 2 primary strands to
50 situate effectuation theory in context of innovativeness among craft family businesses.
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Specifically, the study relied on the first strand to throw light on the assumption of boundary conditions through the introduction of moderated mediation effects. Further, the second strand highlights the relevance of techno-structural fit of firms. The study deploys this assumption to explain how contextual factors such as digitalization and competition shape job crafting among craft family businesses. Merging effectuation and contingency theories create a unique bridge between redesigning tasks and operational novelty in a rapidly evolving techno-structural business environment.

For practical implications, the study adds to the growing pool of literature on entrepreneurial ecosystem discourse (Rondi *et al.*, 2024; Thai *et al.*, 2023). In contemporary times, academic research on entrepreneurial ecosystem has gained considerable scientific inquiry. Notable areas of inquiry include commercial idea incubation, creating opportunities from market uncertainties and optimization of global competitiveness (Kansheba *et al.*, 2024). The current study demonstrate means through which entrepreneurial ecosystem dynamics influence craft family businesses' economic viability. The study explores digital offerings and individual's aptitude to use these offerings to reengineer skills and redesign tasks for productive efficiencies and to gain commercial market appeal. By so doing, the study projects the relevance of craft businesses in opening up commercial frontiers with the aid of digital technologies for trans-regional and national consumer appeal (Fraiberg, 2017). Also, the study points out the inherent tenets of family businesses, which include family value and belief systems, and integrates them with modern trends such as learning and openness to experience, which is aided by digital affordances. Thus, the study uniquely espouse relevance of integrating craft entrepreneurship, digital technologies and family business for success.

Limitations and Future Research Directions

Notwithstanding numerous pragmatic implications arrived at by the study, some notable limitations are worth mentioning for the purpose of future research direction. The current study assessed job crafting, self-initiated AI learning, dynamic capabilities and entrepreneurial innovativeness from a cross-sectional design perspective. Although this research design is effective in the assessment of opinions and attitudes of persons, it is limited in its capacity to reflect changing opinions and attitudes overtime. Also, the study was restricted to craft-based family firms, which are commonly deemed as custodians of ancestral professional heritage. These firms have unique operational methods that are grounded in tradition, hence influence entrepreneurial skills development. Consequently, future studies could explore in-depth means by which traditions impede or promote the use of digital technologies for entrepreneurial innovativeness.

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Table 1. *Factor Analysis, Reliability and Composite Reliability of Constructs*

Factor measurement	Loadings	Variance Exp. (%)	R	CR
Entrepreneurial Innovativeness ($\alpha = 0.886$)		27.794		0.979
EI3	0.843		0.809	
EI10	0.841		0.892	
EI17	0.839		0.901	
EI7	0.833		0.888	
EI1	0.821		0.898	
EI16	0.820		0.799	
EI8	0.816		0.813	
EI2	0.802		0.788	
EI13	0.800		0.745	
EI19	0.797		0.904	
EI4	0.772		0.884	
EI15	0.769		0.828	
EI11	0.748		0.865	
EI12	0.731		0.778	
Job Crafting ($\alpha = 0.851$)		18.089		0.974
JC14	0.852		0.788	
JC6	0.831		0.804	
JC9	0.822		0.705	
JC3	0.819		0.911	
JC19	0.813		0.886	
JC11	0.804		0.842	
JC18	0.804		0.903	
JC5	0.789		0.814	
JC17	0.786		0.796	
JC8	0.733		0.846	
JC7	0.721		0.906	
JC2	0.706		0.844	
JC12	0.702		0.866	
Self-initiated AI Learning ($\alpha = 0.807$)		12.337		0.933
S-AI6	0.890		0.912	
S-AI4	0.814		0.848	
S-AI2	0.744		0.874	
S-AI1	0.741		0.904	
S-AI7	0.711		0.846	

Table 1. *Continuation...*

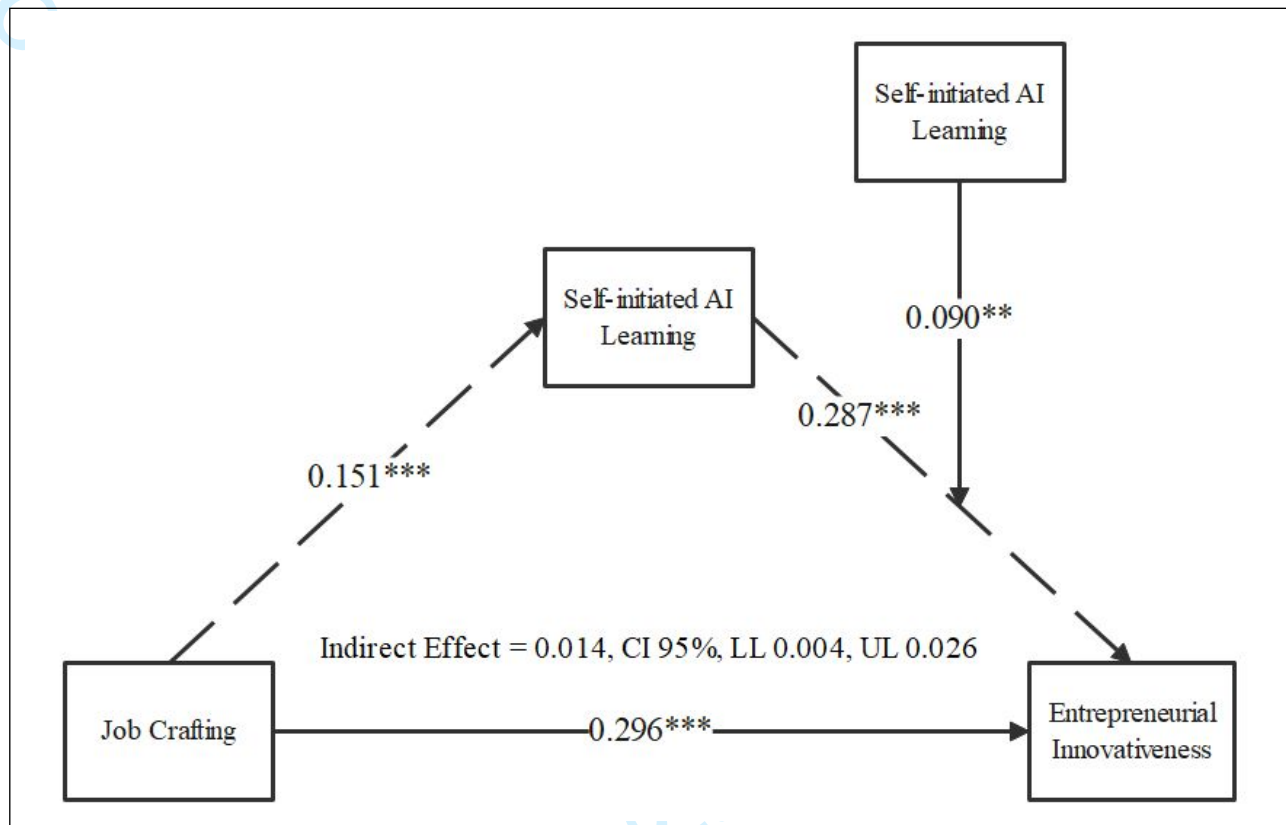
Dynamic Capabilities ($\alpha = 0.829$)		10.543	0.966
DC6	0.854		0.882
DC11	0.829		0.891
DC9	0.822		0.794
DC3	0.813		0.882
DC1	0.811		0.775
DC14	0.805		0.781
DC4	0.779		0.894
DC13	0.748		0.872
DC7	0.712		0.892

KMO = 0.803, Bartlett's test of sphericity: $\chi^2 = 7343.005$, $p < 0.000$

Table 2. Mean, SD, Reliability Measures and Inter-correlation for Constructs

Items	CR	AVE	1	2	3	4
Job Crafting	0.974	0.616	0.785			
Self-initiated AI Learning	0.933	0.613	0.163**	0.783		
Dynamic Capabilities	0.966	0.637	0.138**	0.189**	0.798	
Entrepreneurial Innovativeness	0.976	0.653	0.415**	0.481**	0.243**	0.808
Mean			3.910	4.031	2.997	3.458
SD			0.735	0.685	0.809	0.684

Note(s). SD = Standard Deviation, AVE = Average Variance Explained and CR = Composite Reliability. All inter-correlation coefficients are significant at *p < 0.05 and **p < 0.01. Italics Diagonal figures represent the square root of the AVE; sub-diagonal figures are the latent construct for inter-correlations.

Figure 1. *Tested Research Model*

Source(s): Authors' tested (hypothesized paths) framework (2024)