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연구논문

나이지리아 여학생의 학습 환경 유형화 탐색: 군집분석을 통한 맞춤형 교육 ODA(Official Development Assistance) 전략

권순희*
문재원**

요 약

본 연구는 나이지리아 여학생의 학습 환경을 둘러싼 학습 촉진 요인과 저해 요인을 종합적으로 분석하여 잠재 집단을 유형화하고, 이에 기반한 맞춤형 교육 ODA(Official Development Assistance) 사업 전략을 도출하는 데 목적이 있다. 이를 위해 나이지리아 아부자 연방수도구역(Federal Capital Territory, FCT) 공립 중학교 여학생 328명을 대상으로 설문 조사를 실시하였으며, 계층적 군집분석을 통해 학습 환경의 내재적 구조를 탐색했다. 분석 결과, 여학생 집단은 가사·돌봄 부담이 높은 '가사·돌봄 부담형', 풍부한 사회적·디지털 자원과 높은 자기주도 학습역량을 보이는 '고역량·자원 풍부형', 그리고 경제적 빈곤과 디지털 접근성의 제약이 중첩된 '경제·디지털 취약형'의 세 유형으로 분류되었다.

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일원배치 분산분석 및 효과크기 분석 결과, 가사·돌봄 부담은 군집 간 분산의 약 72%(η^2=.72)를 설명하는 핵심 요인으로 나타나, 학습 환경 격차가 개인의 학습 역량 부족보다는 구조적 환경 조건과 밀접하게 관련됨을 보여주었다. 반면, 자기주도 학습능력은 모든 군집에서 전반적으로 높은 수준을 유지했다. 본 연구의 결과로 군집별 특성을 반영한 맞춤형 교육 ODA 사업의 유형을 제시한다. 특히 현지 주도형 개발(Locally-Led Development, LLD) 관점에서 지역사회와의 협력을 강화하고, 학교를 학습·보건·사회적 지원이 결합된 통합적 지원 플랫폼으로 기능하게 하는 접근의 필요성을 강조한다.

주제어: 교육 ODA(Official Development Assistance), 나이지리아 여학생, 군집분석, 교차성, LLD(Locally-Led Development) 프레임워크

Ⅰ. 서론

2030년 지속가능발전목표(Sustainable Development Goals, SDGs) 달성 시한이 도래함에 따라, 양적 확대에 치중했던 기존 교육 ODA(Official Development Assistance)의 한계를 넘어 실질적 변화를 위한 패러다임의 전환이 가속화되고 있다. 과거 MDGs(Millennium Development Goals) 시대가 물리적 인프라 확충과 취학률 제고라는 양적 팽창에 주력했다면, 포스트 SDGs 시대는 학습자의 실질적인 성취와 '주체성(agency)' 회복을 통한 질적 성장을 요구한다. 최근 인공지능(Artificial Intelligence, AI)과 에듀테크(EdTech)의 비약적인 발전은 개발도상국 교육 현장의 구조적 한계를 극복하고, 학습자를 능동적인 변혁의 주체로 성장시킬 새로운 가능성으로 주목받고 있다. 특히 나이지리아는 이러한 교육 발전의 가능성과 구조적 위기가 공존하는 국가이다. 나이지리아 여학생들은 보코하람(Boko Haram)과 같은 안보 위협, 뿌리 깊은 가부장적 규범, 그리고 빈곤의 악순환이라는 삼중고(triple bind) 속에 놓여 있다. 그러나 최근 연구들은 이들이 단순한 희생자가 아니라, 모바일 기술과 커뮤니티 네트워크를 활용하여 자신의 삶을 개척하려는 잠재력을 지니고 있음을 보고하고 있다(Zasha, 2018).

나이지리아 여학생 교육 문제의 시급성에도 불구하고, 기존의 접근 방식은 복합적인 교육 환경을 분석하는 데 있어 다음과 같은 한계를 보여왔다. 첫째, 기존 연구는 나이지리아의 교육 격차를 주로 '남부와 북부'라는 지리적 이분법이나(Lott, 2025), 단순히 빈곤과 문화적 관습의 결과론적 측면에서만 해석하는 경향이 있었다(Eboyem, 2024). 그러나 실제 교육 현장은 안보불안, 경제적 자원, 가족의 지지, 개인의 디지털 역량 등 다차원적인 요인들이 복잡하게 얽혀 있다. 따라서 단순한 지역 구분이나 단일 변수만으로는 여학생들이 처한 구체적인 '환경의 맥락'을 포착하기 어렵다. 둘째, 공급자 중심의 표준화된 지원 모델의 한계이다. 구조적 제약이 심한 집단과 주체적 역량이 발현되기 시작한 집단은 서로 다른 지원을 필요로 한다. 그러나 학생들의 다양한 환경적 특성을 유형화하여 맞춤형으로 접근하려는 시도는 부족했다. 즉, 여학생들이 처한 위기 요인과 보호 요인이 어떻게 결합하여 나타나는지, 그 패턴(pattern)을 규명하는 실증적 연구가 부재한 실정이다.

이에 본 연구는 나이지리아 여학생들의 교육 환경을 둘러싼 다차원적 변수를 종합적으로 고려하여, 이들의 특성을 유형화하고 맞춤형 지원 방안을 모색하는 데 목적이 있다. 이를 위해 본 연구는 데이터의 내재적 구조를 탐색하는 군집분석(cluster analysis) 방법론을 적용한다. 이를 통해 나이지리아 여학생 집단의 환경을 학습 촉진과 저해 요인에 따라 분류하고, 이를 군집(cluster)으로 유형화하여 그 특성을 규명하고자 한다. 나아가 이러한 분석 결과를 토대로, 포스트 SDGs 시대의 핵심인 'AI 기반 디지털 전환'과 '주체성 강화'에 부합하고 다양한 군집 특성을 포괄하는 교육 ODA 전략을 제언함으로써, 나이지리아 여학생들의 교육 성취를 지원하기 위한 맞춤형 교육 ODA의 근거를 제시하고자 한다. 이를 위한 연구 질문은 다음과 같다.

RQ1. 나이지리아 여학생들의 학습 촉진 요인과 저해 요인에 따른 잠재 집단은 어떻게 유형화되는가?
RQ2. 도출된 각 집단의 유형별 특성은 무엇이며, 집단을 구분 짓는 변수는 무엇인가?
RQ3. 도출된 집단 유형별 특성에 부합하는 맞춤형 교육 ODA 전략은 무엇인가?

Ⅱ. 이론적 배경

1. 나이지리아 여학생 교육의 구조적 제약과 빈곤 재생산 메커니즘

나이지리아 여학생의 교육 현실은 교육 시스템이 지닌 독립적인 힘보다 국가 내부에 누적된 구조와 안보 제약에 영향을 받는다. 식민지 시기부터 답습된 교육 체계는 학생들을 기존 사회 위계에 순응시키는 기제로 작동하며, 교육이 사회 구조의 변화를 견인할 잠재력을 구조적으로 제약하고 있다(Imoka, 2019; Jacob, 2021). 이러한 맥락에서 교육 현장은 다양한 배경의 학생들을 융합하는 완충 지대(buffer zone)로 기능하기보다 종족 간 긴장과 갈등이 재현되는 장(field)이 되기도 한다(Imoka, 2019). 특히, 북부 지역의 특수성과 결합한 보코하람(Boko Haram)과 같은 무장단체의 테러는 학교를 파괴하고 여학생을 납치하여 교육 기회를 물리적으로 박탈한다(Jacob, 2021; Ogunode et al., 2022). 이러한 안보 위기는 북부 지역에 뿌리내린 이슬람 관습과 조기 결혼(early marriage)이 가부장적 규범(patriarchal norms)과 결합하여, 여성의 교육 진입을 구조적으로 차단하는 요인으로 작동한다(Kainuwa & Yusuf, 2013).

이러한 가부장적 규범은 여학생에게 과도한 가사노동과 돌봄 책임을 부과하는 성역할 고정관념으로 구체화되며, 이는 학습 시간 단축과 학업 성취 저하로 이어져 교육 환경을 구조적으로 잠식한다(Odaga & Heneveld, 1995; Yotebieng, 2021). 특히 가사 부담에서 기인한 '시간 빈곤(time poverty)'은 여학생의 학습 시간을 남학생보다 현저히 부족하게 만들며, 결과적으로 중등교육 단계에서의 학업 중단 요인으로 작용한다(Okafor, 2020; Rodgers, 2023).

시간 빈곤에 따른 학업 성취 저하는 가계의 경제적 빈곤과 맞물려, 부모는 여학생 교육을 높은 '기회비용(opportunity cost)'이 수반되는 투자로 인식한다(Odaga & Heneveld, 1995). 그 결과 부모는 한정된 가계 자원을 남학생에게 우선 배분하는 성별 선호 자원 배분 전략(gender-biased resource allocation)을 채택하게 된다(Rodgers, 2023). 이러한 인식에 기반한 자원 배분은 여학생의 상급 학교 진학, 장학금 수혜, STEM(Science, Technology, Engineering, and Mathematics) 진로 선택의 기회를 구조적으로 제약하며, 장기적으로 여성을 저숙련·저임금 노동시장에 고착시켜 빈곤을 재생산하는 기제로 작동한다(Evans et al., 2024; Psaki et al., 2022). 결국, 경제적 빈곤, 안보 불안, 그리고 가부장적 규범은 나이지리아 여학생의 교육 참여를 제약하고 이는 다시 결혼과 가사노동을 매개로 학업 중단과 기회 박

탈로 이어진다. 이러한 과정은 젠더, 빈곤, 가족 내 역할이 상호 교차하며 불평등을 재생산한다(Crenshaw, 1989, 1991).

2. 나이지리아 여학생의 행위주체성(Agency) 형성

교육에서 강조되는 학생 행위주체성(student agency)은 학생이 능동적 주체로서 자신의 삶과 주변 세계에 긍정적인 영향을 미칠 수 있다는 믿음에 기반한다(OECD, 2018). 즉, 행위주체성은 학생이 변화를 만들어내기 위해 목적을 수립하고, 성찰하며, 책임 있게 행동하는 의지와 능력의 총체이다. 이는 학생에게 단순히 학습의 선택권을 부여하는 것을 넘어, 자신의 목적에 따라 행동하는 '목적 있는 학습(learning on purpose)'을 수행할 때 발현된다(엄수정 외, 2023). 이처럼 학생 행위주체성은 학생을 인지적, 사회적, 정서적 역량을 바탕으로 언제 어디서나 배움을 이끌어가는 능동적이고 자율적인 존재로 규정한다(OECD, 2018).

최근 나이지리아 여학생에 대한 관점은 단순히 시혜적 차원의 교육 수혜자를 넘어, 경제적 자립과 주체성(agency)을 확립하는 능동적 행위자로 재정립하고 있다(Cutherell et al., 2025). 특히 금융 문해력 교육 및 직업 훈련 프로그램은 이들이 경제적 독립을 견인하는 주체로 성장할 수 있음을 실증적으로 보여준다(Klugman et al., 2018). 이러한 관점은 여학생들을 빈곤과 억압의 수동적 피해자가 아니라, 환경의 제약을 극복하고 삶의 경로를 개척하는 능동적 주체로 조명한다(Jaksch et al., 2023). 실제로 이들은 조기 결혼과 같은 구조적 제약에서도 교내 동아리, 또래 네트워크, 멘토링 등을 매개로 학업 지속을 위한 주도성을 발휘하며, 선택과 협상을 통해 자신의 삶을 주체적으로 설계하고 있다(Zasha, 2018).

교육 기술(EdTech)의 활용은 이러한 변화를 한층 더 가속화한다. 모바일 애플리케이션을 활용한 수업은 성별에 관계없이 학생들의 흥미를 유발하였으며, 이는 여학생들의 STEM 분야 참여를 독려할 수 있는 효과적인 사례로 평가받는다(Malik et al., 2020). 나아가 프로젝트 기반 STEM 학습과 디지털 도구의 통합은 학생들의 문제해결 역량과 학습 참여도를 유의미하게 향상시키는 것으로 나타났다. 즉, 디지털 역량은 구조적 제약 속에서도 여학생이 자신의 진로를 주도적으로 설계하고 미래 가능성을 확장할 수 있도록 돕는 핵심적인 '자원(resource)'으로 기능한다(Balogun et al., 2022; Strohmeier et al., 2024).

여학생 교육에 대한 긍정적 인식 확산과 지지 환경은 학생들의 자아 효능감을 높이는 기제로 작용한다(Okenwa-Ojo, 2024). 즉, 여성 교사와 학부모-교사 협회(Parent-Teacher Association, PTA) 내 여성 회원들은 여학생들에게 긍정적인 롤 모델(role model)이 되어 도덕적 행동 함양과 자아 인식 고취에 기여한다(Okenwa-Ojo, 2024). 또한, 교사를 대상으로 한 성인지 훈련(Family Life and HIV Education[FLHE] 프로그램)은 학교 내 성별 고정관념을 타파하고, 여학생들이 자신의 권리를 명확히 표현할 수 있는 포용적인 문화를 형성하는 긍정적인 변화를 이끌어냈다(Huaynoca et al., 2014).

이러한 지지적 관계망과 인식의 변화는 외부의 억압을 완충하는 심리적 보호막으로 기능하여, 여학생들이 제한된 자원 속에서도 진로 포부와 학습 목표를 포기하지 않는 동력이다(DeJaeghere, 2018). 실제로 긍정적 자아상을 확립한 학생들은 부모의 지원 부족과 같은 결핍 상황을 단순히 수용하는 데 그치지 않고, 장학금이나 현금 이전(cash transfer) 프로그램과 같은 외부 자원을 적극적으로 탐색하며 스스로 교육 기회를 확보하려는 능동적 행위자(agent)로 성장하고 있다(Psaki et al., 2022).

다만, 잠재력이 일시적인 현상에 그치지 않고 실질적인 교육 성취와 빈곤 탈출로 이어지기 위해서는 개인의 회복력에만 의존해서는 안 된다. 인식 개선을 통한 변화를 제도적으로 뒷받침하고 확장할 수 있는 '통합적 지원 플랫폼(integrated platform)'의 구축이 필수적으로 동반되어야 한다(Plan International, 2012).

3. 나이지리아 여학생 집단의 유형화: 군집분석의 방법론적 타당성

본 연구는 나이지리아 교육 문제가 단순한 남북의 지리적 이분법을 넘어, 안보 위기, 문화적 규범, 식민지적 유산 등 복합적인 환경적 요인의 지배를 받고 있음에 주목한다. 이러한 환경적 요인들은 지역마다 상이하게 결합하여 교육 격차를 유발하므로, 남과 북이라는 이분법만으로 그 복잡한 양상을 파악하기 어렵다. 이에 본 연구는 군집의 구조가 완전하게 알려지지 않은 상태에서 개체 간의 유사성에 근거하여 집단을 형성하는 군집 분석(cluster analysis)을 적용했다(강현철 외, 2021). 즉, 공동체의 지지, 문화적 관습, 교육 인프라 등 다차원적인 환경 변수들이 나타내는 패턴을 분석하여, 유사한 교육적 환경을 공유하는 집단들을 탐색적으로 유형화하고자 한다. 이는 외적 기준이 모호한 상태에서 서로 다른 성질을 가진 구성요소들을 동질적인 소집단으로 분류함으로써(이재길, 2016), 나이지리아 교육 내에 존재하는 '환경의 영향' 양상을 실증적으로 규명할 수 있기 때문이다.

본 연구에서 적용한 군집 분석(cluster analysis)은 사전 분류 정보가 부재한 상태에서 데이터 내재적 패턴을 탐색하는 데 있어 방법론적 타당성을 갖는다. 군집분석은 관측된 변수들의 다변량적 특성을 바탕으로 유사한 객체들을 그룹화하여 데이터의 자연스러운 구조(natural structure)를 발견하는 통계 기법이다. 이 방법의 핵심 목적은 군집 내 구성원 간의 동질성을 최대화하고 군집 간 이질성을 극대화하는 데 있으며, 이는 특정 모집단에 대한 모수적 추론보다는 변수 간의 구조적 관계를 수학적으로 규명하는 기술적 접근이다(Nikolic et al., 2025). 특히 본 연구와 같이 나이지리아 여학생들의 학습 환경과 주도적 학습 능력과 관련된 다차원적 요인이 복합적으로 작용하여 형성되는 잠재적 유형을 규명하고자 할 때, 연구자가 사전에 집단을 정의하지 않고 데이터 자체의 특성에 근거하여 유형을 도출할 수 있다는 점에서 적합한 방법론이라 할 수 있다.

군집분석의 알고리즘 중 본 연구가 채택한 계층적 군집분석(hierarchical clustering)은 탐

색적 연구 단계에서 특히 유용한 타당성을 지닌다. 비계층 군집분석(non-hierarchical clustering)의 K-평균(K-means) 방법은 계산 속도가 빠르고 효율적이나 군집 수(k)를 사전에 지정해야 하며 초기 중심값 설정에 따라 결과가 달라질 수 있는 한계가 있다(Lloyd, 1982; MacQueen, 1967). 반면, 계층적 군집분석은 개별 객체에서 시작하여 유사도가 높은 군집을 단계적으로 병합하는 응집적(agglomerative) 접근을 취함으로써 데이터의 위계적 구조를 덴드로그램(dendrogram)으로 시각화할 수 있다. 이는 군집 수를 사전에 확정하기 어려운 상황에서 연구자가 데이터의 구조를 파악하고 최적의 군집 수를 유연하게 결정할 수 있는 논리적 근거를 제공한다(Johnson, 1967).

군집분석은 통계적 지표를 통해 분류 결과의 타당성을 객관적으로 검증할 수 있는 체계를 갖추고 있다. 군집화의 품질은 내부 평가와 외부 평가 지표를 통해 확인되는데, 대표적으로 Rousseeuw(1987)가 제안한 실루엣 계수(silhouette coefficient)는 객체가 속한 군집 내의 응집도와 타 군집과의 분리도를 정량화하여 -1에서 1 사이의 값으로 제시함으로써 군집 구조의 적합성을 판단하는 준거가 된다. 더불어 군집 내 분산의 최소화 여부와 같은 내부 통계량을 통해 모델의 안정성을 확보할 수 있으며, 이는 주관적 분류가 아닌 데이터 기반의 객관적 유형화를 가능케 한다(Vinh et al., 2010).

마지막으로, 군집분석은 학문적 규명을 넘어 실무적 의사 결정을 위한 도구로서 높은 실용적 타당성을 지닌다. Nikolic et al.(2025)은 군집분석이 데이터 분류를 넘어 정책 설계와 개입 전략 수립에 기여할 수 있음을 강조하며, 집단별 특성에 기반한 차별화된 접근의 가능성을 제시했다. 이는 본 연구에서 도출된 각 군집의 환경적 제약과 개인적 역량의 조합을 토대로, 나이지리아 여학생을 위한 맞춤형 ODA 기반 교육지원 전략을 설계하는 데 군집분석이 방법론적으로 타당하다고 볼 수 있다(Aggarwal & Reddy, 2014).

4. 포스트-SDGs(Sustainable Development Goals)와 교육 ODA(Official Development Assistance) 패러다임의 전환

국제개발협력, 특히 교육 ODA의 초기 패러다임은 새천년개발목표(MDGs, 2000-2015) 체제 하에서 '접근성(access)'의 확대를 최우선 가치로 삼았다. 이 시기는 '보편적 초등교육 달성'이라는 단일 목표 아래 학교 건축이나 기자재 보급과 같은 물리적 인프라 확충에 집중하는 공급자 중심(supply-driven)의 하향식 접근이 주를 이루었다. 그러나 이러한 양적 팽창 전략은 취학률의 상승을 견인했으나 정작 학교에 다니면서도 제대로 학습하지 못하는 '학습 위기(learning crisis)'를 초래했다는 비판이 제기됐다(UNESCO, 2023).

2015년 수립된 지속가능발전목표(SDGs, 2016-2030)는 패러다임의 축을 '양(quantity)'에서 '질(quality)'과 '형평성(equity)'으로 전환했다(한국국제협력단, 2016). SDG 4는 '단 한 사람도 소외되지 않는(leave no one behind)' 원칙에 기반하여 단순한 등록을 넘어 실질적인

학습 성과와 포용적 교육을 강조하였으며, 이는 교육 ODA가 단순 원조를 넘어 사회적 불평등 해소와 역량 강화를 지향하는 권리 기반 접근(rights-based approach)으로 전환되었음을 의미한다(유성상 · 유은지, 2015).

그러나 SDGs 달성 시한인 2030년이 임박함에 따라, 국제사회는 정량적 목표 달성에 치중했던 기존 접근의 구조적 한계를 직시하고 '포스트 SDGs' 시대를 대비한 근본적인 패러다임 전환을 맞고 있다. 특히 기후 변화, 디지털 전환, 그리고 구조적 불평등은 '복합적 위기(polycrisis)'를 심화시켰고, 이전의 표준화된 개발 모델이 현장의 다층적이고 복잡한 문제를 해결하는 데 한계가 있었다(Cernev & Fenner, 2024).

이러한 성찰은 포스트 SDGs 시대 교육이 개인의 성공을 넘어 인류 공동의 생존을 위한 '새로운 사회계약'으로 재정립할 필요가 있다. 이는 향후 교육 ODA의 지향점이 단순한 외부 자원의 주입이 아닌, 현장의 고유한 '행위자성(agency)'을 복원하는 데 있음을 시사한다. 즉, 학습자를 수동적 수혜자에서 탈피시키고, 스스로 구조적 제약을 극복하며 환경을 변화시키는 '변혁적 주체(transformative agents)'로 육성하는 것이 핵심이다(OECD, 2018).

최근 인공지능(AI)의 비약적 발전은 이러한 ODA 패러다임의 전환을 가속화하는 핵심 동인이다. 국내 소프트웨어 산업의 AI 대전환이 기존 정책 전략의 전면적 수정을 강제하듯(ZDNET Korea, 2025), 국제개발협력 분야 또한 이러한 흐름에서 예외가 아니다. 외교부(2025)는 AI 기반 ODA를 한국과 협력국 간의 '상생적 협력 모델'로 규정했다. 구체적으로 개발도상국은 디지털 · AI 역량 강화를 통해 기술 격차를 해소하고, 한국은 이 과정에서 글로벌 기술 경쟁력을 확보하는 '선순환적 상생 구조'를 지향한다(외교부, 2025). 이러한 상호 이익의 결합은 AI가 차세대 교육 ODA를 견인할 핵심 동력임을 보여준다.

그러나 포스트-SDGs 시대의 교육 ODA에서 기술 기반 전환이나 글로벌 차원의 전략 담론이 곧바로 교육 성과로 이어진다고 보기는 어렵다. 교육은 학습자의 일상적 생활과 긴밀히 맞물려 작동하는 사회 제도며, 동일한 AI 기반 교육 모델이나 디지털 학습 체계라 하더라도 지역별 교육 인프라, 가정 내 역할 분담, 성별 규범, 학습 시간의 가용성에 따라 다르다. 특히 나이지리아 여학생의 경우 가사 · 돌봄 노동에 따른 시간 빈곤, 이동의 제약, 경제적 · 디지털 접근성의 격차가 중첩적으로 작동하며, 이러한 조건은 표준화된 교육 모델이 현장에서 작동하는 방식을 구조적으로 제한한다(Psaki et al., 2022; UNESCO, 2023). 이는 과거 인프라 중심 교육 ODA가 취학률 제고에도 불구하고 학습 성과 개선으로 연결되지 못했던 경험과 맞닿아 있다. 이러한 맥락에서 교육 ODA는 개별 학습자가 기존 교육 시스템에 어떠한 방식으로 접속(access)하며, 그 과정에서 시스템이 학습자의 특수한 환경에 맞춰 어떻게 유연하게 조정(alignment)되어야 하는가 라는 구조적 문제를 재인식할 필요성을 제기한다(Cernev & Fenner, 2024; OECD, 2018).

Ⅲ. 연구방법

1. 자료수집 및 윤리적 고려

본 연구는 자료 수집에 앞서 연구 참여자의 권리 보호와 윤리적 타당성을 확보하기 위하여 부산대학교 생명윤리위원회의 심의 및 승인(PNU IRB/2025_141_HR)을 받았다. 또한, 현지 조사 수행을 위하여 나이지리아 FCT(Federal Capital Territory) UBEB(Universal Basic Education Board)의 사전 행정 승인을 획득함으로써, 연구 수행과 관련된 법적·윤리적 절차를 모두 준수했다. 설문조사는 2025년 9월 1일부터 2025년 10월 31일까지 현지 연구보조원과 협업하여 오프라인 배포 및 수거를 진행하였으며, 모든 연구 참여자와 연구 참여자의 법정 대리인으로부터 연구 참여에 대한 자발적 서면 동의를 획득했다.

2. 연구대상의 특성

본 연구의 조사는 나이지리아 수도 아부자(Abuja) 연방 수도 구역(FCT) 내 AMAC(Abuja Municipal Area Council)에 소재한 공립 중학교 2곳을 대상으로 수행되었다. 조사 대상 학교는 지역적 특성을 고려하여 도시 외곽의 주거 밀집 지역에 위치한 남녀공학 중학교(A 학교, n=167)와 신규 조성된 주거 단지 인근의 여학생 전용 중학교(B 학교, n=161)를 선정했다.

연구대상자는 대부분 JSS3(Junior Secondary School 3)에 재학 중인 여학생으로 315명이었으며, JSS2(Junior Secondary School 2)에 재학 중인 여학생은 13명으로 나타났다. 출생연도별 분포를 살펴보면, 2006년(1명, 0.3%), 2007년(6명, 1.8%), 2008년(6명, 1.8%), 2009년(19명, 5.8%), 2010년(33명, 10.1%), 2011년(48명, 14.6%), 2012년(89명, 27.1%), 2013년(102명, 31.1%), 2014년(20명, 6.1%), 2015년(4명, 1.2%), 분포하여 연구대상자의 출생연도는 다양하게 나타났다.

일반적으로 학생의 적정 출생연도는 조사 시점을 기준으로 JSS2는 2012~2014년, JSS3은 2011~2013년 사이에 해당한다(Federal Republic of Nigeria, 2013). JSS2의 경우 2011년생은 2명(15.3%)이 있었으며, JSS3의 경우 2006년부터 2009년 사이 출생 학생은 65명(20.6%)이었다. 이는 학년 반복, 학업 중단 후 복귀, 늦은 취학, 또는 가정의 사회경제적 여건과 같은 요인에 기인한 결과일 가능성이 있다.

3. 연구대상자의 진로 지향성 및 학습요구 특성

본 연구는 연구대상자의 진로 지향성과 학습 요구를 파악하고자 장래 희망 직업 및 선호 방과 후 활동에 관해 설문을 실시했다. 학습자의 다양한 선호와 요구를 반영하기 위해 해당 문항

들을 복수 응답 방식으로 설계하였으며, 수집된 자료는 군집 분석 결과를 해석하기 위한 배경 변수로 활용됐다.

우선, 연구대상자의 진로 지향성을 보여주는 장래 희망 직업을 조사한 결과는 〈표 1〉과 같다. 전체 응답자의 74.1%(243명)가 의사, 변호사, 간호사 등을 포함한 '전문직(professional)'을 희망한다고 응답하여 가장 높은 비중을 차지했으며, 이어 '예술가 및 창작자(19.2%)', '기술 전문직(8.5%)', '공무원(8.5%)' 등이 그 뒤를 이었다.

연구대상자의 학습 요구를 파악하기 위해 선호하는 방과 후 활동(복수 응답)을 조사하였다(〈표 2〉). 응답 결과, '독서 및 토론'이 60.4%(198명)로 가장 높은 응답률을 보여 기초 학업 역량 강화에 대한 강한 의지를 확인할 수 있었다. 특히 주목할 점은 4차 산업혁명 시대의 핵심 역량인 '과학 실험 및 메이커 활동'이 40.5%(133명), '코딩 및 컴퓨터 관련 활동'이 33.2%(109명)로 나타나, '체육 활동(축구 16.5%, 농구 13.4%)'이나 단순 놀이보다 높은 선호도를 보였다는 점이다.

〈표 1〉 연구 참여자의 장래 희망 직업 분포

항목	응답비율(%, 명)
Professional (doctor/nurse/lawyer/etc.)	74.1 (243)
Artist or creator (music/art/theatre/etc.)	19.2 (63)
Civil servant or administrative professional	8.5 (28)
Technical expert (programmer/engineer/IT specialist)	8.5 (28)
Teacher or educator	7.9 (26)
Agriculture, livestock or nature-related worker	7 (23)
Entrepreneur or self-employed individual	5.2 (17)
Volunteer or NGO worker	4.9 (16)
I am not sure yet	3.7 (12)
Pilot	0.6 (2)
Military personnel	0.6 (2)
Scientist	0.6 (2)
Accountant	0.3 (1)
Baker	0.3 (1)
Banker	0.3 (1)
Fashion designer	0.3 (1)

Note: NGO, Non-Governmental Organization.

〈표 2〉 연구 참여자의 희망 방과 후 활동 분포

활동명	건수(비율, %)
Football (soccer)	54 (16.5)
Basketball	44 (13.4)
Badminton / Table tennis	18 (5.5)
Dance / Music / Choir	146 (44.5)
Theatre / Performance	29 (8.8)
Art / Drawing / Crafts	123 (37.5)
Science experiments / Maker activities	133 (40.5)
Coding / Computer / ICT-related activities	109 (33.2)
Reading / Book discussion	198 (60.4)
Volunteering / Community service	19 (5.8)
Career exploration / Job experience	83 (25.3)
Academic support / Self-directed study	123 (37.5)
Playing / Gaming with friends	92 (28)

Note: ICT, Information and Communications Technology.

4. 측정도구 및 변수구성

1) 측정도구의 구성 및 타당성 검증

본 연구에서 사용된 조사 도구는 권일남 · 김태균(2010), 장근영 외(2018), 한국청소년활동진흥원(2023)의 국내 청소년 역량 진단 척도와 나이지리아 통계청 및 청소년개발부(National Bureau of Statistics & Federal Ministry of Youth Development, 2012)의 주요 지표를 참고하여 연구자 2인이 4점 척도의 13문항, 복수응답 8문항으로 구성하였다.[1] 설문 문항의 문화적 맥락과 언어적 적합성을 확보하고자 현지 중등학교 교사 2인으로부터 사전 검토를 받았다.

본 연구는 수집된 데이터의 요인 구조를 명확히 규명하기 위해 다음과 같은 전처리 과정을 거쳤다. 우선, 복수 응답 문항은 해당 항목을 선택한 경우 '1', 선택하지 않은 경우 '0'으로 코딩하여 이진 변수로 변환했다. 아울러 분석의 일관성을 확보하기 위해 4점 리커트 문항 또한 이진화했으며, 구체적으로 긍정 응답인 '매우 그렇다(strongly agree)'와 '그렇다(agree)'는 '1'로, 부정 응답인 '매우 그렇지 않다(strongly disagree)'와 '그렇지 않다(disagree)'는 '0'으로 재코딩했다.

이와 같이 정비된 문항들을 대상으로 변수 간의 잠재적 구조를 파악하고 요인을 추출하기 위

1) 본 연구에 사용된 조사도구는 〈부록〉에 수록하였음.

해 탐색적 요인분석(Exploratory Factor Analysis, EFA)을 실시했다. 그 결과 총 5개의 하위 요인 구조를 도출하였으며, 5개 요인 모델의 구조적 타당성을 확보하기 위해 확인적 요인분석(Confirmatory Factor Analysis, CFA)을 추가로 실시하여 모형의 적합도를 검증했다. 분석 결과, 측정 모형의 적합도 지수는 χ^2=179.71(df=160, p=.136), CFI=.996, TLI=.995, RMSEA=.019, SRMR=.157로 나타났다. 특히, χ^2의 검정 결과가 유의확률 .05 수준에서 기각되지 않았으며(p>.05), CFI와 TLI가 .99 이상, RMSEA가 .05 이하의 수치를 보여 본 연구에서 가정한 5개 요인 구조가 자료를 적합하게 설명한다고 판단했다.

본 연구의 주요 변수는 학습 촉진 요인(사회적 지원, 디지털 역량, 자기주도성)과 저해 요인(경제적 장벽, 돌봄 부담)으로 분류하고, 각 요인의 신뢰도를 Cronbach's α로 검증했다. 사회적 지원(social support) 요인은 교사, 부모, 친구, 멘토 등 주변 인적 자원으로부터 제공되는 정서적·환경적 지지를 반영하는 7개 문항(23-a, 23-b, 26-c, 26-e, 26-f, 26-g, 26-j)[2]으로 구성했으며, 신뢰도 계수는 .80으로 나타났다. 디지털 도구 활용(use of digital tools)은 디지털 기기 및 학습용 애플리케이션 사용 능력을 측정하는 2개 문항(8-a, 8-b~m)으로 구성되었고, Cronbach's α는 .83으로 높은 신뢰도를 보였다. 자기주도 학습능력(self-directed learning)은 학습자가 자신의 진로 목표 달성을 위해 수행하는 구체적이고 주도적인 행동을 반영하는 4개 문항(11, 14, 20, 22)으로 측정되었으며, 신뢰도 계수는 .64로 나타나 탐색적 연구 단계에서 허용 가능한 수준이다(Hair et al., 2010).

경제적 장벽(economic barriers)은 수업료 부족으로 인한 결석 또는 학업 중단 경험, 교육비 지출 부담 등을 포함한 3개 문항(7-e, 24-a, 24-g)으로 구성되었고, Cronbach's α는 .81로 높은 내적 신뢰도를 나타냈다. 마지막으로 가사 및 돌봄 부담(domestic & care burden) 요인은 가정 내 돌봄 노동, 가족관계에서 기인하는 환경적 제약과 정서적 결핍을 측정하는 4개 문항(7-c, 15, 24-b, 24-g)으로 구성되었으며, 신뢰도 계수는 .65로 탐색적 연구에서의 수용 기준(.60 이상)을 충족하였다(Hair et al., 2010)(<표 3>).

2) 변수의 하위 요인 및 조작적 정의

본 연구에서 활용된 측정도구는 학습 촉진 요인(사회적 지원, 디지털 도구 활용, 자기주도성)과 저해 요인(경제적 장벽, 돌봄 부담)이며 다음과 같이 정의했다.

학업 수행을 돕는 긍정적 자원 요인으로 세 가지가 설정되었다. 먼저, 사회적 지원(social support)은 학습자가 진로를 설계하고 학업을 수행하는 과정에서 교사, 부모, 친구, 멘토 등 주변의 인적 자원으로부터 받는 정서적·환경적 지지로 정의된다. 디지털 도구 활용(use of digital tools)은 학습자가 교육 목적을 위해 스마트폰, 기타 툴(컴퓨터, 학습용 앱)을 활용하는 능력으로 정의했다. 자기주도 학습능력(self-directed learning ability)은 학습자가 타인에게 의존하기보

2) 5개 요인의 구성 항목 번호는 <부록>에 수록된 문항의 번호임.

〈표 3〉 요인별 내용, Alpha: Cronbach's α 결과

요인(문항수)	문항 내용	Alpha
사회적 지원(7) (social support)	학습자가 진로를 설계하고 학업을 수행하는 과정에서 교사, 부모, 친구, 멘토 등 주변의 인적 자원으로부터 받는 정서적·환경적 지지	0.80
디지털 도구 활용(2) (use of digital tools)	디지털 도구 사용, 학습용 앱 사용	0.83
자기주도 학습능력(4) (self-directed learning)	학습자가 자신의 진로 목표를 달성하기 위해 수행하는 구체적이고 주도적인 행동	0.64
경제적 장벽(3) (economic barriers)	학습자의 수업료 부족으로 결석 또는 학업 중단위기, 교육비 지출에 대한 부담감	0.81
가사 및 돌봄 부담(4) (domestic & care burden)	학습자가 수행해야 하는 돌봄 노동, 가족 관계에서 오는 환경적 제약, 정서적 결핍	0.65

다 자신의 진로 목표를 달성하기 위해 수행하는 구체적이고 주도적인 행동을 의미한다.

반면, 학업을 방해하는 환경적 저해 요인으로는 두 가지 변수가 포함된다. 경제적 장벽(economic barriers)은 학습자의 수업료 부족으로 인한 결석이나 학업 중단 위기 경험, 그리고 교육비 지출에 대해 느끼는 실질적인 부담감으로 정의했다. 마지막으로 가사 및 돌봄 부담(domestic & care burden)은 학습자가 가정 내에서 수행해야 하는 돌봄 노동과 가족 관계에서 비롯되는 환경적 제약 및 정서적 결핍을 포함하는 개념이다.

5. 자료분석 절차 및 방법

본 연구의 실증 분석을 위해 R(Version 4.5) 프로그램의 dplyr, cluster, factoextra, fmsb, ggplot2, tidyr 등의 패키지를 활용하였으며, 구체적 분석 절차는 다음과 같다.

먼저, 자료의 신뢰성과 대표성을 확보하기 위해 결측치(missing value)에 대한 전처리를 수행했다. 총 328명의 응답 자료 중 결측 자료는 문항별 0~35건의 결측이 있었으며, 결측 패턴을 분석한 결과, 결측이 $p<.001$로 무작위적이지 않음(not missing at random)을 확인하였다. 이에 따라 표본 수 감소로 인한 검증력 저하와 모수 추정의 편의(bias)를 최소화하기 위해 다중대체법(multiple imputation)을 적용하여 결측치를 보정한 후 분석에 활용했다(고길곤·탁현우, 2016; 김덕준, 2007; Rubin, 1978).

본 연구는 학습자의 개인적 역량과 환경적 특성에 따라 잠재적인 집단 유형을 분류하고, 각 집단의 특성을 규명하기 위해 군집분석(cluster analysis)을 실시하였으며, 분석 자료가 이항자료인 점을 감안하여 계층적(hierarchical) 군집 분석을 실시했다(이재길, 2016; 최용석, 2018). 계층적 군집분석은 개별 관측치에서 시작하여 유사한 개체끼리 순차적으로 병합해 나가는 상향식(bottom-up) 방식을 취하므로 데이터가 지닌 자연스러운 구조를 파악하는 데 유용하다. 구

체적인 분석 방법으로는 군집 내 분산을 최소화하여 집단을 가장 명확하게 구분해 주는 Ward's method를 사용했다. 분석 결과 도출된 덴드로그램(Dendrogram)의 결합 수준과 군집화 계수의 변화 추이를 시각적으로 검토하여 연구 대상자를 분류하고, 최적의 군집수를 탐색했다.

최적의 군집 수를 결정하기 위해 Elbow method와 Silhouette method를 통해 타당성 지표를 종합적으로 검토했다. Elbow method 분석 결과는 군집의 개수가 3개일 때 군집 내 오차제곱합(total within sum of square)의 감소 폭이 완만해지는 팔꿈치(elbow) 지점이 형성됨을 확인할 수 있다(〈그림 1〉).

실루엣 분석 결과, k=2(.55), k=3(.51), k=4(.58)인 경우 모두 실루엣 계수가 0.5를 상회하여 통계적으로 타당한 구조를 보였다(Rousseeuw, 1987). 비록 k=4의 계수가 가장 높았으나, 본 연구는 Elbow method 결과와의 정합성 및 군집별 해석의 명확성을 고려하여 3개 군집(k=3)을 최종 모형으로 확정했다.

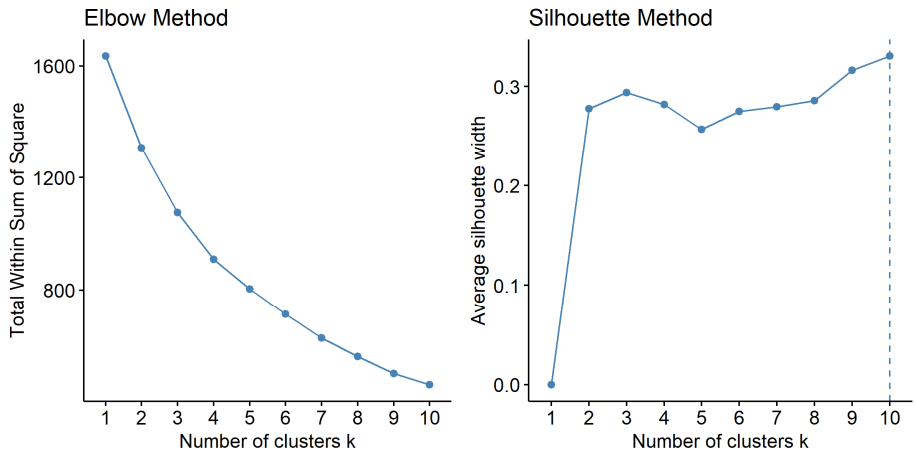
Ⅳ. 연구결과

1. 주요 변인의 기술 통계

본 연구에서 설정한 여학생의 학업 환경 관련 5가지 주요 요인의 기술통계 결과는 〈표 4〉와 같다. 분석에 투입된 모든 변수는 이항 데이터(binary data)로 구성되었으며, 이에 따라 평균값은 0과 1 사이의 수치로 제시된다.

사회적 지원(social support)의 평균은 .46(SD=.31)로 나타났으며, 왜도(.29)와 첨도(-1.20)는 비교적 정규분포에 근접한 분포 형태를 보였다. 디지털 도구 활용(use of digital

〈그림 1〉 Elbow method plot(좌), Silhouette method plot(우)



〈표 4〉 5개 변인의 기술통계 결과

요인	N	Mean	SD	Skew.	Kurt.
사회적 지원(social support)	328	0.46	0.31	0.29	−1.2
디지털 도구 활용(use of digital tools)	328	0.71	0.42	−0.91	−0.9
자기주도 학습능력(self-directed learning)	328	0.96	0.13	−4.66	25.4
경제적 장벽(economic barriers)	328	0.25	0.36	0.92	−0.9
가사 및 돌봄 부담(domestic & care burden)	328	0.18	0.26	1.27	0.5

tools)은 평균 .71(SD=.42)로, 다섯 요인 중 비교적 높은 수준을 보였으며, 왜도(-.91)와 첨도(-.90)는 약간 좌측으로 치우친 분포 특성을 나타냈다.

자기주도 학습능력(self-directed learning)은 평균 .96(SD=.13)으로 가장 높은 평균값을 보였으나, 왜도(-4.66)와 첨도(25.40)가 매우 크게 나타나 분포가 극단적으로 왼쪽으로 치우친 형태임을 확인할 수 있다. 이는 다수의 학생이 해당 요인에서 매우 높은 점수를 기록하고 있음을 의미하며, 표본 전반에 걸쳐 자기주도 학습능력이 전반적으로 높게 분포되어 있음을 시사한다. 경제적 장벽(economic barriers)은 평균 .25(SD=.36)로 상대적으로 낮은 수준을 보였으며, 왜도(.92)와 첨도(-.90)는 다소 우측으로 치우친 분포를 나타냈다. 가사 및 돌봄 부담(domestic & care burden)은 평균 .18(SD=.26)로 가장 낮은 평균값을 보였고, 왜도(1.27)는 우측 비대칭 분포를, 첨도(.50)는 비교적 완만한 분포다.

2. 군집별 특성 및 군집유형 명명

5개 요인(사회적 지원, 디지털 도구 활용, 자기주도 학습능력, 경제적 장벽, 가사 및 돌봄 부담)을 중심으로 3개(k=3) 군집을 분석하였으며, 군집1 75명(22.9%), 군집2 156명(47.6%), 군집3이 97명(29.6%)으로 나타났다(〈표 5〉).

군집1은 사회적 지원 수준이 중간 이상(M=0.51)으로 나타났으며, 디지털 도구 활용도 역시 비교적 높은 수준(M=0.73)을 보였다. 자기주도 학습능력은 0.90으로 높은 편이었다. 반면, 경제적 장벽은 비교적 낮게 나타났음에도 불구하고(M=0.19), 가사 및 돌봄 부담은 세 군집 중 가장 높았다(M=0.58). 군집1은 가사 및 돌봄 부담을 강조하여 '가사・돌봄 부담형(household burden type)'으로 명명했다.

군집2는 모든 요인에서 가장 우수한 수준을 보인 집단이다. 사회적 지원(M=0.59)과 디지털 도구 활용(M=0.96)이 매우 높게 나타났으며, 자기주도 학습능력 역시 최대치에 근접한 수준(M=0.99)을 기록했다. 반면 경제적 장벽(M=0.08)과 가사・돌봄 부담(M=0.03)은 매우 낮았다. 높은 개인 역량과 풍부한 환경적 자원을 모두 갖춘 특성을 반영하여, 군집2를 '고역량・자원

〈표 5〉 군집별 평균과 분산

요인	군집1(n=75)	군집2(n=156)	군집3(n=97)
사회적 지원	0.51 (0.30)	0.59 (0.30)	0.19 (0.14)
디지털 도구 활용	0.73 (0.38)	0.96 (0.18)	0.30 (0.39)
자기주도 학습능력	0.90 (0.23)	0.99 (0.06)	0.97 (0.09)
경제적 장벽	0.19 (0.33)	0.08 (0.22)	0.55 (0.39)
가사 및 돌봄 부담	0.58 (0.19)	0.03 (0.08)	0.09 (0.17)

풍부형(high capacity & resource rich type)'으로 했다.

군집3은 사회적 지원(M=0.19)과 디지털 도구 활용(M=0.30)이 현저히 낮게 나타났으며, 경제적 장벽은 세 군집 중 가장 높았다(M=0.55). 즉, 군집3은 구조적 빈곤과 디지털 접근성의 이중 제약에 놓여 있음을 암시한다. 다만 자기주도 학습능력은 0.97로 높게 나타나, 열악한 환경 속에서도 학습 의지와 내적 동기는 유지되고 있음을 확인할 수 있다. 대신, 가사 및 돌봄 부담은 상대적으로 낮았다(M=0.09). 이 군집은 높은 잠재력에도 불구하고 물리적 자원 결핍이 가장 시급한 해결 과제임을 고려하여, 군집3을 '경제 · 디지털 취약형(economically & digitally vulnerable type)'으로 명명했다.

3. 군집 간 주요 변인 차이 검증

군집분석을 통해 도출된 세 가지 유형(가사 · 돌봄 부담형, 고역량 · 자원 풍부형, 경제 · 디지털 취약형) 간에 주요 변인들의 차이가 통계적으로 유의미한지 확인하기 위해 일원배치 분산분석(one-way ANOVA)과 사후 검증을 실시했다. ANOVA의 분석 결과는 〈표 6〉과 같다.

ANOVA 결과, 사회적 지원, 디지털 도구 활용, 자기주도 학습능력, 경제적 장벽, 가사 및 돌봄 부담의 모든 변인에서 군집 간 통계적으로 유의미한 차이가 나타났다($p<.001$). 이는 본 연구에서 분류한 세 군집이 각 요인별로 뚜렷하게 구별되는 이질적인 집단임을 시사한다.

변수별 영향력은 집단 간 차이의 크기를 나타내는 효과 크기(η^2)를 살펴본 결과, '가사 및 돌봄 부담'($F=415.86$, $p<.001$, $\eta^2=.72$)이 72%의 설명력을 보였다. 이는 세 집단을 구분 짓는 가장 결정적인 요인이 학습자 개인이 처한 가정 내 돌봄 노동임을 의미하는데, 이는 학습능력보다 가정 내 역할 부담이 학습 환경을 구분하는 핵심 요인임을 시사한다.

학습 환경의 변별 요인으로 '디지털 도구 활용'($F=136.65$, $p<.001$, $\eta^2=.46$)은 집단 간 환경 격차를 보여주는 지표이며, '경제적 장벽'($F=74.65$, $p<.001$, $\eta^2=.32$)과 사회적 지지($F=72.75$, $p<.001$, $\eta^2=.319$)는 30%대의 설명력으로 군집을 규정한다. 반면, '자기주도 학습능력'은 통계적으로 유의미한 차이는 있었으나($F=13.78$, $p<.001$), 효과 크기($\eta^2=.08$)는 다른 변인들에 비

〈표 6〉 군집별 ANOVA

변수	SS (집단 간)	df (집단 간)	MS (집단 간)	SS (오차)	df (오차)	MS (오차)	F	p-value	η^2
사회적 지원	9.84	2	4.92	21.97	325	0.07	72.75	〈.001	0.31
디지털 도구 활용	25.80	2	12.9	30.68	325	0.09	136.65	〈.001	0.46
자기주도 학습능력	0.42	2	0.21	4.97	325	0.02	13.78	〈.001	0.08
경제적 장벽	13.62	2	6.81	29.65	325	0.09	74.65	〈.001	0.32
가사 및 돌봄 부담	16.39	2	8.20	6.40	325	0.02	415.86	〈.001	0.72

해 상대적으로 낮은데, 이는 세 집단 간 학습 성과의 격차가 개인의 학습 역량이나 의지 자체의 차이보다는, 돌봄 부담이나 경제·디지털 인프라와 같은 환경적 제약의 차이에서 기인한다고 볼 수 있다.

이어, 군집 간 구체적인 차이를 규명하기 위해 Scheffé의 사후검증(post-hoc test)을 실시한 결과는 군집별 특징은 〈표 7〉과 같다.

사회적 지원의 경우, 군집1과 군집2 간에는 통계적으로 유의미한 차이가 없었으나(p=.079), 두 군집 모두 군집3보다는 유의미했다(1,2〉3, p〈.001). 즉, 군집3은 경제, 디지털 자원뿐만 아니라 인적 자원(사회적 지원) 면에서 가장 소외된 집단이었다. 디지털 도구 활용은 군집2가 가장 우수하였고, 이어 군집1, 군집3 순으로 나타나 세 집단 간 위계가 뚜렷했다(2〉1〉3, p〈.001). 군집3은 경제적 장벽이 높은 동시에 디지털 도구 활용 또한 가장 낮아 이중고를 겪고 있는 것으로 해석된다.

경제적 장벽은 군집3이 가장 높게 나타났으며, 군집1, 군집2 순으로 유의미한 차이를 보였다(3〉1〉2, p〈.05). 특히 군집3과 군집2 간의 평균 차이(MD=0.472)와 효과 크기(Cohen's d=1.60)가 매우 커, 군집3이 경제적 어려움에 가장 취약한 집단임이 확인되었다. 가사 및 돌봄 부담은 군집1이 다른 두 군집에 비해 압도적으로 높은 수준을 보였으며, 군집3, 군집2 순으로 낮아지는 경향이 뚜렷하게 나타났다(1〉3〉2, p〈.01). 이는 군집1을 특징짓는 가장 핵심적인 요인이 돌봄 부담임을 재확인시켜준다.

자기주도 학습능력은 군집2와 군집3 간에 유의미한 차이가 없었으며(p=.471), 두 군집 모두 군집1보다 유의미하게 나타났다(2,3〉1, p〈.001). 흥미로운 점은 군집3이 경제적·환경적 수치가 가장 낮았음에도 불구하고, 자기주도적인 학습 태도는 자원이 풍부한 군집2와 대등한 수준을 유지하고 있다는 것이다. 반면 가사 부담이 가장 큰 군집1은 학습 주도성이 상대적으로 낮았다.

4. 분석 결과 요약

본 연구의 군집 분석 결과, 세 군집 모두에서 자기주도 학습 역량(agency)이 높게 나타났다

〈표 7〉 Scheffé의 사후검증(post-hoc test)

변수	비교	평균 차이 (M_{diff})	95% CI [LL, UL]	p-value	Cohen's d	Hedges' g
사회적 지원	2-1	0.08	[-0.01, 0.17]	0.079	0.27	0.27
	3-1	-0.32	[-0.41, -0.23]	〈.001	-1.43	-1.43
	3-2	-0.40	[-0.48, -0.32]	〈.001	-1.617	-1.61
디지털 도구 활용	2-1	0.22	[0.12, 0.32]	〈.001	0.84	0.84
	3-1	-0.43	[-0.55, -0.32]	〈.001	-1.12	-1.12
	3-2	-0.66	[-0.75,-0.56]	〈.001	-2.32	-2.32
자기주도 학습능력	2-1	0.09	[0.05, 0.13]	〈.001	0.67	0.66
	3-1	0.07	[0.03, 0.12]	〈.001	0.44	0.44
	3-2	-0.02	[-0.06, 0.02]	0.471	-0.27	-0.27
경제적 장벽	2-1	-0.11	[-0.21, -0.01]	0.027	-0.43	-0.43
	3-1	0.36	[0.25, 0.47]	〈.001	1.00	1.00
	3-2	0.47	[0.38, 0.56]	〈.001	1.60	1.60
가사 및 돌봄 부담	2-1	-0.55	[-0.60, -0.51]	〈.001	-4.30	-4.29
	3-1	-0.49	[-0.54, -0.44]	〈.001	-2.79	-2.78
	3-2	0.06	[0.02, 0.10]	0.004	0.48	0.48

Note: M_{diff}, Mean Difference; CI, Confidence Interval; LL, Lower Limit; UL, Upper Limit.

는 점이 확인됐다. 이는 나이지리아 여학생들의 학업 성취 및 학습 참여 수준이 외부 환경 요인에 의해 제약받고 있음을 시사한다. 군집 형성의 변인을 분석한 결과, '가사·돌봄 부담'과 '경제적 제약'이 집단을 구분하는 가장 결정적인 요인으로 도출되었다. 이에 따라 본 연구는 학습에 필요한 자원을 충분히 확보한 '고역량·자원 풍부형', 가사 및 돌봄 노동으로 인해 학습 시간이 구조적으로 제한된 '가사·돌봄 부담형', 그리고 경제적 빈곤과 디지털 기기 접근성 결핍이 중첩된 '경제·디지털 취약형'의 세 유형으로 여학생 집단을 유형화했다.

ANOVA 및 효과크기 분석 결과는 이러한 군집 간 구조적 차이를 통계적으로 뒷받침한다. 특히 가사·돌봄 부담 변수는 군집 간 분산의 약 72%를 설명하며 가장 큰 효과크기를 보였는데, 이는 여학생의 학습 성과를 저해하는 핵심 기제가 구조적 환경임을 보여준다. 다시 말해, 높은 자기주도 학습 역량을 보유하고 있음에도 불구하고, 가사노동과 경제적 빈곤이라는 이중의 제약이 학습 기회를 실질적으로 차단하고 있는 것이다.

가사노동 부담은 여학생의 학업 경로를 지역의 가부장적 규범과 연관 지을 수 있으며, 이들을 학습 주체라기보다 가정 내 돌봄 노동의 담당자로 위치 짓는 관행을 정당화한다(Zasha, 2018). 이는 억압과 배제가 단일 요인이 아닌 다층적 구조 속에서 작동한다는 Crenshaw(1989) 및

Crenshaw(1991)의 교차성 이론(intersectionality)과도 부합한다. Psaki 외(2022)은 저소득 가구 여학생이 수행하는 장시간 가사노동이 출석률과 학습 몰입도를 유의미하게 저해한다고 보고한 바 있으며, Rodgers(2023)은 빈곤 상황에서 교육 자원이 남학생에게 우선 배분되는 성별 편향적 가계 전략이 여학생의 교육 기회를 구조적으로 축소시킨다는 연구 결과를 뒷받침한다. 이러한 선행연구와 본 연구의 군집분석 결과를 종합하면, 본 연구에서 확인된 여학생들의 높은 학습 행위주체성은 제약된 환경 속에서 형성된 '회복적 · 저항적 주체성'으로 해석하는 것이 타당하다.

이러한 맥락에서 교육 ODA는 단순한 기자재 보급이나 인프라 구축을 넘어, 지역사회 중심의 지속가능한 인식 개선이 전제되어야 한다. 구체적으로 부모, 종교 지도자, 여성 공동체 등 지역 핵심 주체들과의 장기적 협력을 통해 여학생의 가사 · 돌봄 부담을 당연시하는 규범 자체를 변화시키는 노력과 더불어, 실질적인 장학금 지원(Psaki et al., 2022) 및 물리적 인프라 확충을 결합하여 '통합적 지원 플랫폼(integrated platform)' 형태로 구체화되어야 한다.

V. 결론 및 제언

본 연구는 나이지리아 여학생의 학습 환경을 세 가지 유형으로 범주화함으로써, 학습 격차가 가사 · 돌봄 부담과 자원 불균형이라는 구조적 요인에서 비롯됨을 실증적으로 규명하였다. 효과크기 분석 결과, 가사 · 돌봄 부담은 다른 요인에 비해 현저히 큰 집단 간 차이를 형성하였으며(η^2=.72), 이는 경제적 장벽이나 디지털 접근성보다 강력한 판별 요인임을 시사한다.

'가사 · 돌봄 부담형', '경제 · 디지털 취약형' 집단은 열악한 환경 속에서도 높은 자기주도 학습능력을 유지한 점은 빈곤이 학습 동기를 제한하지 않으며, 이는 제약된 환경 속에서도 여학생들이 높은 자기주도 학습 성향을 유지할 가능성을 시사한다. 이러한 경향은 여학생을 '회복적 · 저항적 주체성'을 보유한 존재로 추론할 수 있다.

장래 희망 직업 및 방과 후 활동에 대한 기술통계 분석 결과, 다수의 여학생이 전문직 진출과 탐구적 · 기술적 학습 활동을 선호하는 경향이 나타났다. 이는 군집 분석에 직접 투입된 변인은 아니나, 세 집단 모두에서 높게 나타난 자기주도 학습능력과 맥락적으로 연결되는 지향적 특성으로 해석될 수 있다. 즉, 여학생들의 학습 격차는 진로 의지의 부족이 아니라, 가사 · 돌봄 부담과 경제 · 디지털 제약이라는 구조적 조건에 기인함을 재확인하게 한다.

본 연구에서 도출된 세 가지 군집별 특성과 '가사 · 돌봄 부담'이 학습 환경 격차의 72%를 설명한다는 실증적 결과는, 향후 교육 ODA가 학습자가 처한 구조적 제약을 해소하고 이들의 높은 행위주체성(agency)을 실질적인 학습 성과로 연결할 수 있는 맞춤형 전략을 수립해야 함을 시사한다. 본 연구의 결과로 다음과 같은 맞춤형 전략을 제언할 수 있다.

첫째, '가사 · 돌봄 부담형' 군집을 위해서는 '시간 빈곤'을 해소할 수 있는 유연하고 개방적

인 교육 모델이 필요하다. 이들은 높은 학습 역량을 보유하고 있음에도 가중된 가사 노동으로 인해 학습 시간이 구조적으로 제한되어 있다. 이를 위해 '교육 기회의 평등과 개방' 및 '열린 교육'의 기회를 고려하여 한국의 '방송통신고등학교' 모델을 벤치마킹할 필요가 있다(김우영, 2025). 특히 라디오, 모바일 등 비대면 매체를 활용한 원격 교육 플랫폼을 강화하여 가사 노동과 학습의 병행이 가능하도록 지원하고, 학교 운영 시간을 유연화하여 노동과 학업 탄력적으로 조정할 수 있음으로써 여학생의 교육 선택권을 제공할 수 있을 것이다(Adeyemı, 2011).

둘째, '경제·디지털 취약형' 군집은 교육의 경제적 장벽을 낮추고 디지털 사다리를 제공하는 포용적 전략이 요구된다. 빈곤과 디지털 소외가 중첩된 이 집단에게는 출석률과 연동된 조건부 현금 지원(conditional cash transfers)이나 소액 장학금(micro-scholarships)을 통해 가계의 교육비 부담을 완화해 주는 것이 필요하다(Psaki et al., 2022). 동시에 고가의 장비보다는 현지 보급률이 높은 모바일을 활용한 저사양·저대역폭 중심의 디지털 리터러시 교육을 실시하여, 이들이 정보 소외 계층에서 정보활용 주체로 전환될 수 있는 토대를 마련해야 한다(Balogun et al., 2022).

셋째, '고역량·자원 풍부형' 군집은 지역사회의 변화를 견인할 변혁적 주체(transformative agent)로 육성해야 한다. 자원 접근성이 양호하고 STEM 분야에 높은 선호도를 보이는 이들의 특성을 반영하여, 인공지능(AI)이나 데이터 과학 등 고도화된 에듀테크 기반의 심화 학습 프로그램을 지원할 필요가 있다(OECD, 2018). 이들이 습득한 역량을 지역사회 내 다른 여학생들에게 전달할 수 있도록 또래 멘토링 시스템을 구축한다면, 외부 지원에만 의존하지 않는 자생적인 학습 생태계를 조성하는 데 기여할 수 있을 것이다.

끝으로, 모든 유형에 공통적으로 적용되어야 할 통합적 전략은 '현지 주도형 개발(Locally-Led Development, LLD)' 관점에서의 인식 개선이다. 즉, 교육 ODA는 단순한 물적 자원 투입을 넘어 부모, 종교 지도자, 지역 공동체와 협력하여 여학생의 교육권을 저해하는 가부장적 규범과 문화적 신념을 변화시키는 옹호 활동(advocacy)을 병행해야 한다(김유겸, 2024). 이를 통해 학교는 지식 전달의 장소를 넘어 보건, 경제, 문화적 지원이 결합한 '통합적 지원 플랫폼(integrated platform)'으로 기능하게 함으로써, 나이지리아 여학생들이 구조적 제약 속에서도 자신의 삶을 주도적으로 선택할 수 있는 환경을 조성할 수 있을 것이다.

본 연구는 나이지리아 수도권 지역의 여중생만을 대상으로 하였으므로, 연구 결과를 나이지리아 전체 여학생 집단으로 일반화하는 데에는 한계가 있다. 특히 모든 집단에서 일관되게 높게 나타난 자기주도적 학습 역량이 발현되는 맥락은 향후 질적연구 등을 통해 규명할 필요가 있다.

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부록

Survey Questionnaire

This study aims to explore the agency of Nigerian adolescent students within the context of educational Official Development Assistance (ODA). All responses will be collected anonymously; however, limited identifiable information (grade, class, and student number) will be gathered solely for research management purposes. Data analysis will be conducted in strict accordance with research ethics guidelines, with the utmost priority placed on protecting participants' personal information.

▣ Basic Information

Gender: ☐ Male ☐ Female
Year of Birth:
Current Status:
School Name:
Grade: Class: Student Number:

▣ Educational Experience (please select only one option 1 to 6)

1. I believe that the classes provided at my school are connected to my personal interests.
☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree
2. I believe the rules in my school are fair.
☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree
3. I believe that, as a girl, I have the same educational opportunities as boys.
☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree
4. In our community, it is common for girls to drop out of school.
☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree
5. My teachers show interest in my dreams and career aspirations.
☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

6. My school provides counseling and mentoring programs for students.

☐ Yes ☐ No

7. What were the main reasons for your school absences during the term? (select all that apply)

a.☐ Health problems

b.☐ Hygiene and menstruation

c.☐ Household chores or caregiving responsibilities

d.☐ Transportation or commuting issues

e.☐ Lack of tuition, uniform, or school supplies

f.☐ Bullying or violence at school

g.☐ Lack of interest in school

h.☐ I have not been absent

i.☐ Other (please describe) : _____

8. What online or digital tools have you used? (select all that apply)

a.☐ None

b.☐ Smartphone

c.☐ Tablet

d.☐ Desktop or laptop computer

e.☐ Online lectures (YouTube, Khan Academy, Coursera, etc.)

f.☐ Google classroom or Microsoft teams

g.☐ Video conferencing platforms (Zoom, Skype, etc.)

h.☐ Messaging apps (WhatsApp, Telegram) used for sharing assignments

i.☐ Search engines (Google, Bing, etc.) for information retrieval

j.☐ Educational apps (e.g., Duolingo, Photomath, Code.org)

k.☐ AI learning tools (e.g., ChatGPT, Grammarly, AI Tutors)

l.☐ Online test or quiz platforms (e.g., Kahoot, Quizizz)

m.☐ Other (please specify):_____

9. What kinds of extracurricular activities would you like to engage in after school or on weekends? (select all that apply)

☐ Football (soccer)
☐ Basketball
☐ Badminton / Table Tennis
☐ Dance / Music / Choir
☐ Theatre / Performance
☐ Art / Drawing / Crafts
☐ Science experiments / Maker activities
☐ Coding / Computer / ICT-related activities
☐ Reading / Book discussion
☐ Volunteering / Community service
☐ Career exploration / Job experience
☐ Academic support / Self-directed study
☐ Playing / Gaming with friends
☐ Other (please specify): _____

▣ Self-Awareness and Agency (please select only one option 10 to 14)

10. I feel that I can make my own decisions about my future (such as career, marriage, etc.).

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

11. I can ask for help from people around me when I need it.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

12. I set academic goals for myself and try to study in a planned and organized way.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

13. When unexpected difficulties arise, I try to find solutions on my own.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

14. When I realize that my actions or decisions were wrong, I reflect on the cause and try to improve.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

▣ Influence of Gender, Culture, and Social Norms (please select only one option 1 to 4)

15. I have experienced limitations in pursuing further education or a career because I am a girl.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

16. My religion or culture influences my career choices or the timing of my marriage.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

17. In our community, girls are expected to pursue certain jobs or behave in specific ways.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

18. My parents want me to prioritize education over marriage.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

19. If you have ever felt that gender, religion, or community environment affected your academic or career goals, what factors influenced you? (select all that apply)

a.☐ I have experienced expectations or limitations from parents or teachers due to my gender (male/female).

b.☐ My religion or beliefs have influenced my career choices.

c.☐ In my community, certain jobs or academic fields are either encouraged or discouraged.

d.☐ There are few schools or programs available in my area.

e.☐ My choices are affected by social expectations or traditional norms.

f.☐ I have not felt any influence.

g.☐ Other (please describe):_____

▣ Career Decision and Goals (please select only one option 20 to 22)

20. I have thought specifically about my future career.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

21. I know a university or job that matches my interests.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

22. I make and carry out plans (such as study schedules and time management) to achieve my career goals.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

23. What sources do you use when making career decisions? (select all that apply)

a.☐ Advice from parents

b.☐ Advice from teachers

c.☐ Opinions of friends or peers

d.☐ Career-related classes or mentoring programs

e.☐ Internet search or YouTube videos

f.☐ Social media (Facebook, Instagram, TikTok, etc.)

g.☐ Online career information sites (e.g., CareerOneStop, Naviance)

h.☐ School career counseling or academic advising

i.☐ Aptitude or psychological test results

j.☐ My own thoughts and goals

k.☐ Other (please specify):_____

24. What is the biggest challenge you face in achieving your academic or career goals?

a.☐ Lack of tuition

b.☐ Opposition from parents or guardians

c.☐ Lack of schools in the region

d.☐ Academic performance or exam pressure

e.☐ Lack of information on higher education

f.☐ Social prejudice against girls

g.☐ Family caregiving or financial responsibilities

h.☐ Other (please describe): _____

25. What kind of person would you like to become after graduation or in the future? (select one or describe)

a.☐ Professional (doctor, nurse, lawyer, etc.)
b.☐ Technical expert (programmer, engineer, IT specialist)
c.☐ Teacher or educator
d.☐ Artist or creator (music, art, theatre, etc.)
e.☐ Entrepreneur or self-employed individual
f.☐ Civil servant or administrative professional
g.☐ Agriculture, livestock, or nature-related worker
h.☐ Volunteer or NGO worker
i.☐ I am not sure yet
j.☐ Other(please specify): _____

26. What types of support do you believe are most necessary to achieve your academic or career goals? (select all that apply)

a.☐ Specific information about education or jobs
b.☐ Scholarships or financial aid
c.☐ Career counseling and encouragement from teachers
d.☐ Access to internet and digital devices for learning
e.☐ Time and space to study at home
f.☐ Emotional support from parents or guardians
g.☐ Opportunities to meet mentors (seniors, professionals, etc.)
h.☐ After-school academic or career-preparation programs
i.☐ Guidance on exam preparation and study strategies
j.☐ Opportunities to discuss career paths with friends
k.☐ Other (please specify):_____

Exploring Typologies of Learning Environments among Nigerian Schoolgirls: Cluster Analysis for Tailored Education Official Development Assistance (ODA) Strategies

Soonhee Kwon*
Jaewon Mun**

Abstract

This study aims to categorize latent groups of Nigerian female students through a comprehensive analysis of the facilitators and barriers within their learning environments. It seeks to develop customized Educational Official Development Assistance (ODA) strategies based on these typologies. To achieve these purposes, we conducted a survey among 328 female students from public junior secondary schools in the Federal Capital Territory (FCT), Abuja, Nigeria. A hierarchical cluster analysis was used to examine the underlying structure of the students' learning environments. The analysis identified three distinct clusters: the Household Burden group, the High-Capacity and Resource-Rich group that exhibits abundant social and digital resources in addition to high self-directed learning capabilities, and the Economic and Digital Vulnerability group that faces overlapping financial and digital access constraints. One-way Analysis of Variance (ANOVA) and effect size analysis revealed that domestic and caregiving burdens were the primary differentiating factors, accounting for approximately 72% of the variance between clusters (η^2=0.72). This finding suggests that disparities in learning environments are more closely linked to structural conditions than to individual learning capacities since self-directed learning competence remained consistently high across all clusters. Based on these findings, this study proposes customized educational ODA strategies tailored to the characteristics of each cluster. It emphasizes the need to strengthen community

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partnerships through Locally Led Development (LLD) and to transform schools into integrated support platforms that combine education, health, and social services.

Key words: Education Official Development Assistance (ODA), Nigerian Schoolgirls, Cluster Analysis, Intersectionality, Locally-Led Development (LLD) Framework

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Original Article

Legitimacy, Motivation, and Coordination in a Multistakeholder Partnership for Education in Emergencies: The Case of *Vacaciones en Paz* in Illes Balears

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Abstract

This article examines *Vacaciones en Paz* (VeP) as an example of a long-running Multi-Stakeholder Partnership (MSP) providing Education-in-Emergencies (EiE) support for Sahrawi refugee children. Evidence on how actor motivation, legitimacy, and coordination evolve over time in humanitarian-development contexts remains limited. Focusing on the implementation in Illes Balears (Spain) between 2011 and 2018, this article conducts a document-based content analysis of NGO annual reports, Corporate Social-Responsibility (CSR) reports, and public records, supported by stakeholder mapping. The findings show that (i) legitimacy

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diversity (pragmatic for public institutions, moral-relational for civil society, and symbolic for private actors) together with (ii) motivational complementarity and adaptive coordination anchored by the Associació d'Amics del Poble Sahrauí de les Illes Balears (AAPSIB), underpin the partnership's long-term resilience. Despite financial fluctuations, stable participation and trust-based governance have enabled sustained medical and educational support for approximately 90 children annually. This article contributes an empirically grounded portrayal of legitimacy-based governance in MSP dynamics in EiE contexts and offers practical guidance for enhancing sustainability through modest formalization, diversified resources, and balanced accountability.

Key Words: Multistakeholder Partnership, Education in Emergencies, Stakeholder Legitimacy, Humanitarian–Development Nexus, Sustainable Development Goals (SDG) 17

Ⅰ. INTRODUCTION

The concept of development has long been dominated by economic interpretations that equate progress with economic growth. Early theories assumed that the individual pursuit of profit would eventually benefit the broader population, producing a trickle-down effect (Dang & Sui Pheng, 2015). This view has proven limited, as economic growth alone has not resolved persistent inequality nor addressed social exclusion or institutional fragility (Engelhard, 1983). Over the past two decades, development theories and practices have shifted toward a multidimensional understanding of well-being that recognizes the interdependence of economic, social, environmental and institutional factors. This normative shift, institutionalized through the Millennium Development Goals (MDGs) and deepened by the Sustainable Development Goals (SDGs), places partnership at the center of implementation, coordination, and accountability for sustainable development (Jones, 2006).

The complex and interconnected nature of contemporary global challenges, ranging from climate change to protracted displacement, makes unilateral decisions inadequate and requires collaborative solutions that transcend national and sectoral boundaries (Pryshlakivsky & Searcy, 2012). Multistakeholder Partnerships (MSPs) have therefore become a core governance device that mobilizes and aligns heterogeneous actors (state, market, and civil society) around shared objectives. SDG 17 codifies this shift by explicitly acknowledging partnerships as both a means and an end to achieving sustainable development. Yet the promise of MSPs is tested most in humanitarian settings, where institutions are often weak, resources are scarce, and actors are motivated by divergent values and timeframes. In these environments, MSPs can play an essential role in bridging humanitarian and development objectives by providing immediate relief while sustaining long-term capacity building. However, in such environments, effective cooperation depends less on formal authority than on how actors manage legitimacy, motivation, and coordination over time.

A good example of protracted crisis can be found in the north of Africa. Since the mid-1970s, the Sahrawi refugee population has lived in camps near Tindouf, Algeria, following Spain's withdrawal from Western Sahara and the subsequent ter-

ritorial dispute with Morocco (Milán & María, 2007; Ruiz-Miguel, 2022). Nearly fifty years later, approximately 180,000 Sahrawi refugees remain in protracted displacement with limited access to basic services and livelihood opportunities (Polisario, 2023). The harsh desert conditions, with temperatures reaching 50℃ during summer, place particular strain on children.

Spain has retained historical and moral ties with the Sahrawi population. Although national-level diplomatic engagement is constrained by relations with Morocco, Spanish regional governments, civil society organizations, and private contributors continue to support humanitarian initiatives. A durable expression of this solidarity is the *Vacaciones en Paz* (VeP-"Holidays in Peace") program, which, since the late 1970s, has enabled thousands of Sahrawi children to spend the summer with Spanish host families. These stays provide medical examinations, nutritional support, and educational opportunities unavailable in the camps (CEAS, 2023). Over time, VeP has evolved from a volunteer initiative into a coordinated multilevel network linking Sahrawi institutions with Spanish public, civic, and private actors in an enduring MSP that bridges humanitarian relief and development cooperation.

Despite its long-term success, VeP has received limited scholarly attention as a partnership model in the literature. Existing research of Education in Emergencies (EiE) has tended to focus on program outputs or global coordination structures, while MSP literature still privileges international "platform" initiatives. Less attention has been paid to community-anchored partnerships that endure for decades on modest budgets and strong relational ties. Examining how such a partnership functions, in terms of who participates, why they stay, and how they coordinate, can illuminate mechanisms that enable durable cooperation under resource and legitimacy constraints.

Guided by these gaps, this study attempts to address three main questions:

1. Which stakeholders participate in *Vacaciones en Paz*, and how have their roles evolved over time?
2. What motivates different actors to remain engaged in the partnership, and what legitimacy foundations sustain that engagement?
3. Which coordination mechanisms and challenges characterize the partnership's continuity over time?

This article's objective is to analyze VeP as a MSP for EiE. By examining the case through the lenses of stakeholder and legitimacy theories, this study aims to identify the dynamics that explain the persistence and adaptability of the partnership. Although VeP is national in scope, this article focuses on the program in Illes Balears (Spain), one of the longest and most consistent regional branches. The Balearic case is analytically strategic for three reasons. First, participation has been continuous, enabling longitudinal observation across multiple political cycles. Second, the region generates rich public documentation (NGO reports, Corporate Social-Responsibility [CSR] notes, and government grant records) that supports triangulation. Third, as an island region with a dense civic sphere and strong health system, Illes Balears offers a distinctive setting to observe coordination among local, regional, and national levels and with Sahrawi authorities. Using longitudinal documentary evidence (2011-2019) from this region, we can see that legitimacy diversity (procedural/pragmatic for public actors, moral/relational for civil society, reputational for private firms), motivational complementarity, and adaptive, light-touch coordination jointly produce partnership resilience. The article contributes by (i) offering empirical evidence from a rarely examined, community-based initiative in a refugee context; (ii) clarifying how legitimacy and motivation interact to sustain coordination where formal authority is limited; and (iii) proposing feasible design lessons for decentralized cooperation that link humanitarian and development objectives.

Ⅱ. THEORETICAL BACKGROUND

1. Stakeholder Theory and Its Application to Development Partnerships

The concept of *stakeholders* emerged from management and organizational studies to understand how multiple actors influence and are influenced by institutional decision-making (Freeman, 2010). Stakeholder theory argues that organizations do not operate in isolation but depend on relationships with a range of actors whose expectations and resources shape their performance and legitimacy. These actors include shareholders, donors, employees, clients, communities, and regulators.

In the field of development cooperation, stakeholder theory has gained prominence as governments, international organizations, and Non-Governmental Organizations (NGOs) increasingly rely on collaborative mechanisms to pursue shared objectives. Partnerships allow the pooling of complementary assets, such as financial resources, expertise, legitimacy, and networks, to address complex social problems that no single actor can manage independently (Gray & Purdy, 2018). From this perspective, coordination is a strategic process of negotiation among stakeholders with different interests and degrees of power.

Stakeholder interactions are rarely neutral in nature. They are shaped by asymmetries in access to information, decision-making authority and resources. Therefore, understanding partnership governance requires examining how asymmetries are managed. Scholars such as Bryson et al. (2006) have noted that successful partnerships tend to build *collaborative advantages* through deliberate efforts to balance power relations, ensure inclusiveness, and cultivate trust. When these mechanisms fail, partnerships risk reproducing dependency or symbolic cooperation rather than the genuine co-production of outcomes. Applied to development practice, stakeholder theory invites questions about who participates, whose interests prevail, and how collaboration is sustained when authority is dispersed. These questions are central to MSPs, particularly in humanitarian and EiE settings where accountability is diffuse and institutional incentives vary across actors.

2. Legitimacy and Motivation in Multistakeholder Partnerships

While stakeholder theory highlights the diversity of actors and interests, legitimacy theory explains why these actors choose to participate and remain engaged. Legitimacy refers to the perception that an actor's involvement or an institution's actions are appropriate, desirable, or aligned with shared norms and values (Suchman, 1995). Three main legitimacy bases are commonly distinguished:

1. Pragmatic legitimacy, based on tangible benefits and performance outcomes.
2. Moral legitimacy, rooted in normative beliefs about right conduct and social responsibility.
3. Cognitive legitimacy, grounded in taken-for-granted understandings of what is socially accepted or expected.

In MSPs, legitimacy operates as a form of social currency. Public institutions often seek legitimacy by demonstrating their accountability and responsiveness to citizens. Civil society organizations derive their legitimacy from moral and humanitarian claims. Private firms pursue legitimacy to strengthen their social licenses and corporate reputations (Glasbergen, 2011). These differing bases of legitimacy influence each actor's motivation to collaborate and their preferred contributions.

Motivation and legitimacy are also dynamic in nature. They can change over time as political contexts shift or as the perceived benefits of cooperation evolve. Pattberg & Widerberg (2016) observed that long-standing partnerships often experience cycles of consolidation and decline, depending on whether actors continue to perceive their involvement as legitimate and rewarding. Those that renew this alignment endure; those that fail lose credibility and coherence. In humanitarian environments, where outcomes are uncertain and reliance on public goodwill high, maintaining legitimacy is not peripheral but constitutive of effective governance. Volunteers' altruistic motivation produces relational legitimacy; consistent government funding generates pragmatic legitimacy; visible corporate support enhances reputational legitimacy. The interplay of these forms creates the "social glue" that compensates for limited formal authority in long-term humanitarian partnerships.

3. Partnership Governance and Coordination

Partnership governance refers to the structures and processes through which multiple stakeholders manage their joint initiatives. The literature identifies several governance models, ranging from hierarchical coordination led by public authorities to horizontal networks that emphasize voluntary collaboration (Provan & Kenis, 2008). The choice of model depends on the context, power distribution, and resource interdependence among actors.

In development cooperation, effective governance requires a balance between inclusiveness and efficiency. Overly centralized structures may marginalize local actors, whereas loose networks can suffer from ambiguity and duplication. To address these challenges, scholars have emphasized *meta-governance*, which is the capacity of a lead organization or steering committee to provide strategic direction, monitor performance, and mediate conflicts without undermining autonomy (Sørensen & Torfing, 2009).

The literature also highlights the importance of trust, accountability, and communication in maintaining the coordination of care. Trust reduces transaction costs and allows flexible adaptation to uncertain environments (Bryson et al., 2015). Accountability mechanisms, both upward (to funders or authorities) and downward (to beneficiaries or communities), help to ensure transparency and learning. Finally, communication structures such as regular reporting, joint planning, and information sharing facilitate alignment across institutional boundaries. Too much formality risks bureaucratizing volunteers and stifling initiative; too little can generate ambiguity and fatigue. Sustainable MSPs balance flexibility with light institutionalization, allowing adaptive coordination while preserving shared norms.

4. Education in Emergencies and the Humanitarian–Development Nexus

The field of EiE seeks to guarantee access to safe and quality education for populations affected by conflict or disaster. Education is increasingly recognized as a human right and a tool for protection, psychosocial recovery, and social cohesion (INEE, 2024). However, providing education during protracted crises poses significant coordination challenges, including overlapping mandates among humanitarian and development actors, unstable funding cycles, and gaps in accountability.

Recent debates have emphasized the need to bridge the humanitarian-development divide through more integrated approaches (Nicolai & Triplehorn, 2003). This involves aligning short-term humanitarian responses with long-term system strengthening and sustainability. MSPs are particularly well suited to this task because they mobilize complementary capacities. Governments and public agencies provide policy frameworks and services; NGOs contribute community networks and moral legitimacy; and private actors supply specialized expertise or resources. However, sustaining such partnerships demands legitimacy not only among funders and authorities but also within host communities and among beneficiaries (Sinclair, 2013).

The VeP initiative sits precisely at this humanitarian-development intersection. It provides immediate protection and health care for Sahrawi children while nurturing long-term intercultural learning and solidarity networks between Spain and the Sahrawi camps. Its longevity invites analysis of the social mechanisms (legitimacy, motivation, coordination) that enable continuity under uncertainty.

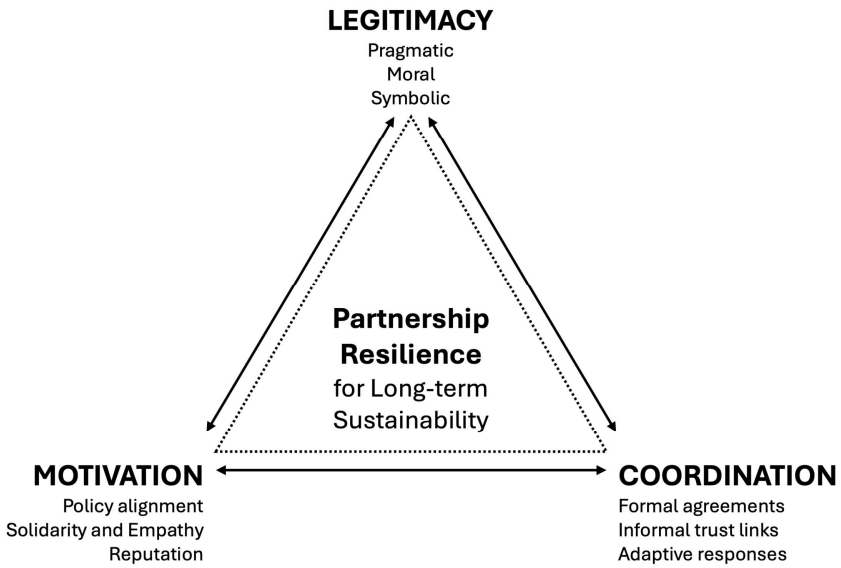
5. Analytical Framework for This Study

The three theoretical pillars: stakeholder diversity, legitimacy-motivation alignment, and adaptive coordination, can be conceptualized as interacting dimensions that sustain cooperation over time.

1. Stakeholder composition and evolving roles determine who participates and how power and resources circulate.
2. Legitimacy and motivation explain why actors engage and persist, identifying the moral, pragmatic, or reputational foundations of participation.
3. Coordination and governance describe how interdependence is managed through formal and informal mechanisms.

These dimensions are analytically distinct but mutually reinforcing: legitimacy shapes motivation; motivation drives coordination; coordination practices reproduce or weaken legitimacy. This recursive relationship, shown in 〈Figure 1〉,

〈Figure 1〉 Analytical framework that informs the sustainability of MSPs



Note: 1) Legitimacy diversity, motivational complementarity, and adaptive coordination interact to generate partnership resilience and long-term sustainability. The triangle represents a dynamic system rather than a hierarchy; arrows illustrate mutual reinforcement among the three dimensions.
2) MSPs, Multi-Stakeholder Partnerships.

offers a lens to interpret partnership performance beyond output indicators, focusing instead on processes that maintain cooperation under resource constraints. The framework guides the research design: stakeholder mapping addresses the who; documentary coding explores why actors engage and remain legitimate; and longitudinal analysis captures how coordination adapts across years. Together, these methods examine how legitimacy, motivation, and coordination co-evolve to produce the enduring humanitarian-development partnership embodied by VeP.

Ⅲ. RESEARCH DESIGN AND METHODOLOGY

1. Research Design and Case Selection

This study adopts a qualitative case study approach to examine VeP as an example of a MSP for EiE. Case study research is well-suited for exploring complex, context-dependent phenomena where multiple actors interact across institutional and sectoral boundaries (Yin, 2014). Focusing on a single initiative allows for an in-depth understanding of mechanisms, such as legitimacy building or motivational alignment, that cannot be captured by cross-sectional or purely quantitative approaches. The case-study approach was particularly suited to VeP because the program's evolution depends on processes unfolding over time: annual cycles of recruitment, coordination, and feedback create a continuous loop between actors in Spain and in the Sahrawi camps. Capturing these iterative patterns required attention to temporal sequence, institutional context, and the relational nature of cooperation. The design is exploratory and explanatory. It seeks not to measure efficiency but to identify and interpret the underlying mechanisms that explain the partnership's stability. It also responds directly to the call by Pattberg & Widerberg (2016) for more longitudinal, process-oriented analyses of partnerships in humanitarian and development settings.

Although VeP operates throughout Spain, each autonomous community manages its own implementation through local NGOs in coordination with the Sahrawi Delegation and Coordinadora Estatal de Asociaciones Solidarias con el Sáhara (CEAS)-Sáhara (the national umbrella network). To retain analytical depth, the study concentrates on the Balearic branch, coordinated by the Associació d'Amics

del Poble Sahrauí de les Illes Balears (AAPSIB, 2023). This selection is theoretically and empirically justified on four grounds:

1. Continuity: Illes Balears has participated in VeP almost uninterruptedly for more than two decades, ensuring a sufficiently long temporal horizon for analysis.
2. Data richness: The region produces abundant publicly accessible documentation, including NGO annual reports, government grant records, and CSR statements from private collaborators.
3. Governance distinctiveness: As an island region with strong municipal autonomy, Illes Balears provides a microcosm of Spain's decentralized cooperation model, facilitating observation of vertical and horizontal coordination.
4. Comparative representativeness: The Balearic case mirrors structural features of other regional branches (a central coordinating NGO, mixed funding, and stable volunteer base), allowing cautious analytical generalization (Yin, 2014).

The analysis covers the period 2011–2019, because (i) it offers the longest continuous sequence of program implementation before the COVID-19 disruptions and the diplomatic tensions of the early 2020s; (ii) it spans multiple political cycles at the regional level, providing variation in institutional context; and (iii) documentary availability is consistent throughout these years, enabling systematic cross-year comparison.

2. Data Collection

The study relies on documentary analysis of institutional sources that record VeP's activities, resources, and coordination processes. Documentary research is well established in development studies as a rigorous method for reconstructing organizational behavior and institutional evolution when ethnographic or survey data are unavailable (Bowen, 2009; Scott, 2014). Three main document groups were analyzed:

1. Civil-society reports: Fourteen annual Reports of the AAPSIB (2023) from 2011–2019. Each report outlines objectives, participating families, medical and cultural activities, partner lists, and financial statements.

2. Public-sector documents: Nineteen items, including regional and municipal funding agreements, cooperation-policy plans, and IB-Salut memoranda covering medical examinations and insurance procedures.
3. Private-sector and media materials: Twenty-three CSR reports or news releases from clinics, optical centers, transport companies, and the Balearic airport authority (AENA, 2023), supplemented by local press coverage validating institutional claims.

All files were retrieved between October and December 2023 from institutional websites and official archives. Each document was catalogued in a spreadsheet noting year, issuing organization, document type, and page length. When multiple versions existed, the most updated and complete version was used. To mitigate self-reporting bias, secondary press coverage and CEAS-Sáhara newsletters (CEAS, 2023) were used to cross-check key events (e.g., charter flight delays, funding renewals). Where possible, budget amounts and partner names were verified across at least two independent sources.

3. Data Analysis

The analysis combined qualitative content analysis with stakeholder mapping. Following the procedure described by Bryman (2016), textual data were coded using the NVivo 12 qualitative analysis software. The coding followed an iterative process.

An initial round of open coding identified references to (a) project activities, (b) stakeholder participation, and (c) financial flow. These categories were refined into thematic codes corresponding to the analytical dimensions developed in Section II: stakeholder composition, motivation and legitimacy, and coordination dynamics.

Stakeholders were classified according to their sectoral affiliation (public, civil society, or private) and role (funding, coordination, service delivery, or advocacy). The frequency and context of references to each actor were used as indicators of their degree of involvement. Although the documents differ in length and focus, their standardized annual format allows for cross-year comparisons.

Stakeholder mapping was then conducted to visualize the interconnections

among actors. Recurrent collaborations and funding dependencies were identified using co-occurrence analysis within the dataset. These maps provide an empirical basis for assessing the stability or fluctuation of stakeholder networks over an eight-year period.

Given the reliance on documentary sources, particular attention was paid to ensuring the credibility and robustness of the analysis. Reliability was strengthened through source triangulation, cross-checking information from NGO reports against CSR statements, government records, and media coverage to confirm participation and funding details. Temporal triangulation across eight consecutive years reduced the influence of exceptional events or short-term fluctuations, allowing observation of recurring patterns. All coding decisions and excerpts were documented, enabling transparency and potential re-examination. Although documentary analysis cannot fully capture the informal and interpersonal dimensions of coordination, the consistency of reporting across independent institutional sources enhances confidence in the validity of the findings.

Because the dataset consists of institutional documents, the analysis focuses on reconstructing the institutional logics and recurring coordination mechanisms that the actors themselves considered important enough to document. These sources illuminate formal responsibilities, resource flows, and procedural routines, but they also provide indirect clues regarding less visible practices, such as volunteer mediation, informal problem-solving, or trust-based cooperation, through recurring references and patterned omissions. By reading the material longitudinally, the study traces how these mechanisms consolidate over time and how different actors frame their roles in the partnership's evolution. This analytical choice complements, rather than replaces, empirical detail that first-hand interviews could provide, and it guides the interpretation presented here.

Within this framework, three limitations should nonetheless be acknowledged. First, data availability varied among actors: while public institutions and major corporations produced regular reports, smaller organizations and volunteer groups rarely did, resulting in partial visibility of their contributions. Second, institutional documents are inherently self-reported and may accentuate achievements or downplay difficulties; this bias was addressed through media verification and comparison among sources. Third, the study's focus on a single region and timeframe constrains generalization beyond the Balearic case. Despite these constraints, the

longitudinal and multi-source design provides a robust and contextually grounded understanding of the partnership's structure, evolution, and coordination practices. This foundation supports the analysis presented in the next section, which examines stakeholder composition, motivations, and governance dynamics.

Ⅳ. FINDINGS AND ANALYSIS

1. Overview of the Partnership Structure

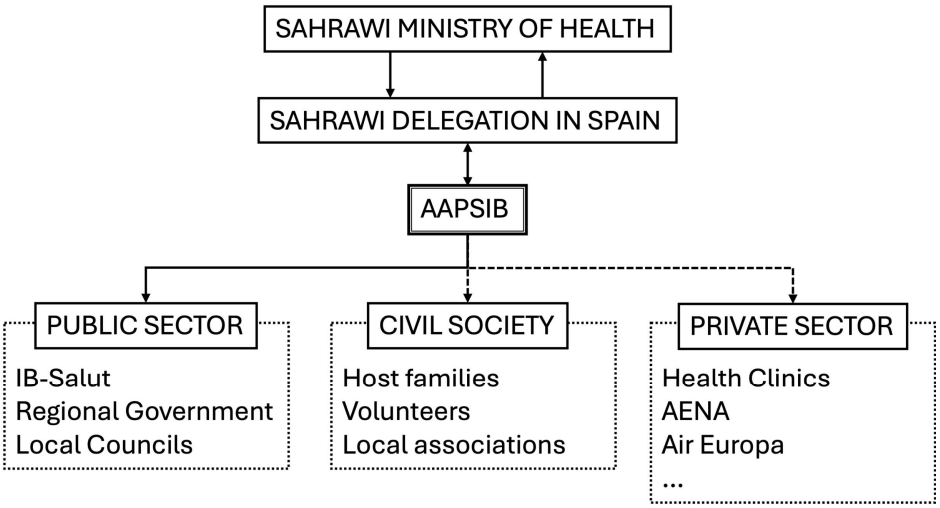
VeP operates as a decentralized, multi-level partnership linking Sahrawi refugee institutions with Spanish regional and local governments, NGOs, and private contributors. The national coordinating body, the Coordinadora Estatal de Asociaciones Solidarias con el Sáhara (CEAS-Sáhara), provides overall guidance, while regional associations implement local logistics in collaboration with the Delegación Saharaui para España. In Illes Balears, coordination is led by the AAPSIB, which acts as a boundary organization between host families, public institutions, and the Sahrawi delegation. AAPSIB manages the recruitment of host families, documentation, medical coordination, and communication with camp authorities. The regional government (*Govern de les Illes Balears*) and several municipal councils provide financial and logistical support, while the regional public health service (*IB-Salut*) ensures medical screening for all participating children.

This configuration reflects a hybrid coordination pattern that combines formal agreements (for funding and medical procedures) with informal, trust-based collaboration among volunteers and private actors. Over time, this arrangement has stabilized into a resilient local network (〈Figure 2〉).

2. Participation and Funding Dynamics

Between 2011 and 2019, VeP in Illes Balears hosted approximately 90-100 Sahrawi children each summer, depending on mutual agreements between the authorities, host-family availability, and the regional budget. This pattern is confirmed in AAPSIB's annual reports, which record participation figures in the high 80s to mid-90s throughout the period, reflecting the program's ability to maintain

〈Figure 2〉 Stakeholder map of VeP implementation in Illes Balears



Note: 1) AAPSIB serves as a coordination hub connecting public institutions (regional government, IB-Salut, municipalities), civil-society organizations (host families, volunteers, local associations), and private actors (clinics, AENA, Air Europa). Arrows indicate coordination and information flows. Dashed arrows represent informal and changing ties.
2) VeP, *Vacaciones en Paz*; AAPSIB, Associació d'Amics del Poble Sahrauí de les Illes Balears.

continuity despite fiscal austerity and political turnover.

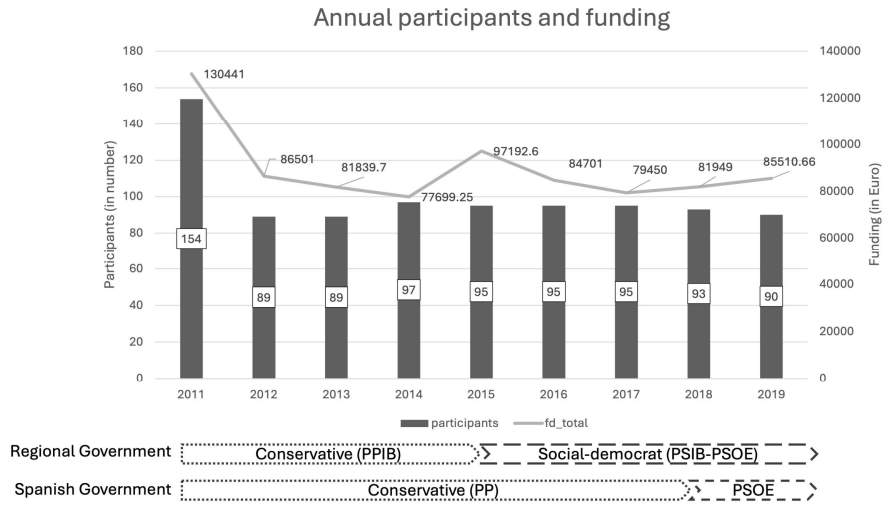
As shown in 〈Figure 3〉, after a dip in 2011 following the entry of the conservative party both at regional and national levels, funding patterns have mirrored this steady participation. As reported in their Cooperation Strategy documents, the regional government's annual grants cover transportation, insurance, and administrative costs; municipal councils co-finance cultural activities. Private partners provide in-kind or CSR contributions (optical and dental services, logistical aid). Although the total budget fluctuated modestly year-to-year, no campaign was suspended during 2011-2019.

3. Stakeholder Roles and Contributions

1) Public institutions

Public actors form the partnership's institutional backbone. The *Govern de les Illes Balears* allocates regular cooperation grants to AAPSIB, usually on a yearly cycle aligned with budget approval. Municipalities contribute smaller but visible sup-

〈Figure 3〉 Annual participants, funding in VeP Illes Balears, and party in government, 2011–2019



Note: 1) Bars (left axis) show the number of children hosted; line (right axis) indicate the total annual funding (in €). The arrows under the graph show the leading party in both the regional and national governments.
2) VeP, *Vacaciones en Paz*.

port: transport, cultural programming, and meeting facilities.

The regional health service IB-Salut institutionalized cooperation through annual agreements specifying roles and accountability. Medical teams perform general, dental, and ophthalmological examinations for every child, with specialist referrals when needed. This operational partnership between IB-Salut and AAPSIB embodies pragmatic legitimacy grounded in professional competence and transparency.

> "All participating children received general, dental and ophthalmologic examinations coordinated with IB-Salut and volunteer clinics."
>
> (AAPSIB Annual Report, 2016)

Public authorities' motivation blends normative (solidarity and human-rights commitment) and pragmatic (visible humanitarian impact) incentives. The program's modest budget and positive media coverage make it a politically safe and socially rewarding cooperation tool.

2) Civil-society organizations

Civil society, embodied by AAPSIB and a network of local solidarity committees, is the moral and relational core of VeP. Volunteers recruit host families, coordinate documentation, accompany medical appointments, and organize community events. Their engagement stems largely from ethical conviction and interpersonal solidarity rather than material incentives. AAPSIB's continuity over decades has built relational legitimacy: public institutions trust its professionalism, and citizens identify it as a credible humanitarian intermediary. This reputation allows the NGO to mediate between bureaucratic and civic spheres, ensuring coherence without formal authority. Smaller associations complement this work by raising funds or awareness through school visits, fairs, and local media.

Municipal and project descriptions of VeP help to illustrate these civil-society roles in practice. Local municipalities report examples of children from the camps who each year leave the desert to spend the summer in Mallorca. Although they initially arrive without understanding the local language, after two months with a host family they are described as "totally integrated" into daily life and able to respond to what is asked of them (Santanyí, 2017). This kind of intensive, everyday accompaniment (sharing meals, supporting language learning, and integrating children into local activities) has long been central to the work of host families and volunteers. Reports additionally stress that the program involves sensitization campaigns, meetings with host families, medical check-ups and follow-up, and a final demonstration that brings together families, volunteers, and the children themselves, explicitly linking the hosting experience to broader public awareness of the Sahrawi cause and reinforcing the program's moral-relational legitimacy.

> "Our volunteers bridge the technical requirements of the administration with the human warmth that defines this program."
>
> (AAPSIB Annual Report, 2014)

3) Private-sector actors

Private participation is episodic but strategic. Clinics and optical centers donate examinations and lenses; pharmacies and laboratories provide materials; and transport companies and airport authorities contribute logistics. Their engagement rests on reputational and relational motivation: CSR alignment with humanitarian

values enhances corporate image and employee pride. However, the absence of long-term agreements means participation fluctuates.

> "Local clinics and opticians offered pro bono services for the VeP medical checks, renewing their commitment each summer." (Clínica Baviera, 2023)

Although less visible, the private sector adds symbolic legitimacy that broadens the partnership's social recognition and public visibility.

4. Motivations and Legitimacy

1) Public institutions

Public actors draw legitimacy from procedural transparency (competitive grant allocation, public reporting) and normative coherence (alignment with regional cooperation policies). Their motivation is partly reputational, showcasing Balearic commitment to solidarity, and partly instrumental, achieving cooperation goals within limited budgets. Regional cooperation with VeP reflects their institutional commitment to human rights and solidarity. Budget cuts in 2012-2013 tested this legitimacy, yet AAPSIB's advocacy and cross-party support maintained continuity, illustrating how moral legitimacy can buffer pragmatic shocks.

2) Civil society

Civil-society legitimacy rests on moral conviction and relational trust. The host-family experience transforms abstract solidarity into lived empathy, producing intrinsic motivation that survives funding fluctuations. AAPSIB capitalizes on this emotional connection through continuous communication, training, and transparent management. The association's reputation for reliability functions as informal certification for public authorities and private donors alike. As AAPSIB Report from 2016 puts it, families' generosity sustains a bridge of friendship beyond political cycles.

3) Private sector

Private actors cultivate reputational legitimacy through CSR involvement. Their motivation is often framed in ethical and community terms ("returning social value

to society") rather than pure marketing. Because cooperation depends on personal networks, continuity hinges on key champions inside each company, creating flexibility but also vulnerability to turnover. This pattern illustrates what Glasbergen (2011) terms "ad hoc legitimacy," where collaboration persists as long as reputational benefits outweigh the costs.

5. Coordination and Governance Dynamics

1) Modes of coordination

The partnership operates through a hybrid governance structure that combines hierarchical and network features. The AAPSIB functions as a coordinating hub, supported by formal agreements with the regional government and informal arrangements with private actors. Decision-making is consensus-based and guided by annual planning meetings before each summer campaign.

Three coordination modes were identified.

1. Coordination: Routine exchange of information and joint scheduling between the AAPSIB and public institutions.
2. Delegation: Entrusting specific tasks, such as medical examinations, to specialized entities like IB-Salut.
3. Mutual Adaptation: Flexible problem-solving during implementation, especially in logistics and crisis response.

These modes often co-exist. The absence of a formal steering committee allows for flexibility but also places heavy reliance on the NGO's leadership capacity.

2) Communication and accountability

Communication follows both vertical and horizontal channels of communication. The AAPSIB reports annually to funders while maintaining continuous contact with host families and the Sahrawi delegation. Feedback from families serves as an informal monitoring mechanism that identifies issues related to health, adaptation, or logistics.

Formal accountability of the beneficiaries in the camps remains limited. Information rarely flows back to families after summer, reflecting the broader

challenge of downward accountability in international cooperation. However, the program's visibility in local media and its recurring success stories create a form of public scrutiny that reinforces responsibility.

3) Challenges in coordination

Despite their overall stability, partnerships face recurring challenges.

- Resource dependency: Heavy reliance on public grants limits financial autonomy.
- Volunteer fatigue: Sustained engagement requires constant recruitment and motivation efforts.
- Uneven private participation: The lack of continuity in sponsorship affects planning.
- Information asymmetry: Coordination between the Spanish and Sahrawi sides depends on intermediaries, leading to occasional communication gaps.

These challenges do not threaten the program's existence but constrain its potential for expansion and innovation.

Between 2011 and 2019, VeP in Illes Balears demonstrated remarkable continuity despite fiscal austerity and political turnover in the Spanish government. Document analysis revealed the stable involvement of key actors, with only minor fluctuations in funding levels. Three temporal phases can be distinguished.

1. Stabilization (2011-2013): Following national budget cuts in development cooperation, regional funding became the mainstay of the program. AAPSIB consolidated its administrative systems and formalized its cooperation with IB-Salut.
2. Diversification (2014-2016): Private sponsors and local councils increased their support, enabling complementary educational and cultural activities.
3. Adaptation (2017-2019): Renewed political shifts required advocacy to secure funding continuity, while the NGO strengthened community outreach to maintain the host family numbers.

Throughout these phases (summarized in 〈Table 1〉), legitimacy and motivation were mutually reinforcing. Successive cycles of public endorsement and community participation have sustained the initiative, even under financial strain.

〈Table 1〉 Identified program phases with their characteristics

Phase	Period	Characteristics
Stabilization	2011–2013	Regional government becomes primary funder; IB-Salut formalizes annual cooperation; families adjust to austerity context.
Diversification	2014–2016	Municipal and private sponsors expand cultural/educational activities; new optometry and dental partners join.
Adaptation	2017–2019	Political shifts reduce regional allocations; AAPSIB increases outreach and fundraising; continuity maintained.

Note: AAPSIB, Associació d'Amics del Poble Sahrauí de les Illes Balears.

Overall, these findings yield three intertwined mechanisms that explain VeP's endurance:

1. Complementary legitimacy: public (procedural/pragmatic), civic (moral/relational), and private (symbolic) forms reinforce one another.
2. Motivational reciprocity: altruistic volunteerism sustains public commitment, while visible institutional backing validates civic efforts.
3. Adaptive coordination: trust-based collaboration compensates for limited formal structures, allowing flexible responses to shocks.

These mechanisms illustrate how legitimacy and motivation operate as governing resources in humanitarian partnerships. When formal hierarchy is absent, legitimacy pluralism and motivational complementarity substitute for legal authority, producing what can be termed "pragmatic resilience".

V. DISCUSSION

The findings demonstrate that the long-term continuity of VeP rests on the dynamic interaction among legitimacy, motivation, and coordination rather than on any single dimension alone. As illustrated in 〈Figure 1〉, legitimacy diversity provides the foundation that attracts and retains heterogeneous actors; motivational complementarities sustain their engagement; and adaptive coordination mechanisms translate these impulses into collective action. The triangulation of documentary evidence from NGOs, government agencies, and media reports confirms that this interaction has reproduced partnership resilience across more than a decade.

1. Legitimacy as the Stabilizing Base

The partnership's durability depended first on its composite legitimacy. Public institutions contributed procedural and pragmatic legitimacy through formal agreements, funding, and institutional oversight, while civil associations supplied moral legitimacy anchored in humanitarian values and community trust. Private firms and foundations added reputational legitimacy by associating with a socially respected cause. As the findings showed, these different forms were not competing but mutually reinforcing: when governmental resources contracted during the 2012–2013 austerity period, the moral credibility accumulated by AAPSIB and the hosting families preserved social support and justified continued in-kind contributions. In theoretical terms, legitimacy heterogeneity compensated for fluctuations in any single source, validating the assumption that plural legitimacy enhances collective stability in MSPs.

2. Motivational Complementarities as a Bridging Mechanism

This plural legitimacy activated distinct yet compatible motivations. Public actors were primarily driven by accountability and policy continuity, civil organizations by humanitarian commitment and social recognition, and private partners by reputational and relational returns. The findings revealed that these asymmetric motivations, instead of fragmenting the initiative, created a balance of short- and long-term incentives: pragmatic goals such as logistics and health screening relied on public routines, whereas the moral drive of volunteers maintained inter-annual engagement even when tangible benefits were limited. This pattern substantiates the framework's claim that legitimacy diversity energizes complementary motivations, which in turn sustain participation despite uneven capacities or rewards.

3. Coordination as Adaptive Integration

The analysis identified a light meta-governance structure centered on AAPSIB that facilitated routine coordination without formal hierarchies. Annual planning meetings, role delegation to the regional health service, and constant informal

communication between families and volunteers allowed the partnership to function with minimal bureaucracy. This configuration exemplifies adaptive coordination: low formalization preserved flexibility, while shared moral reference points provided coherence. At the same time, this reliance on minimal formalization and interpersonal trust generates a clear governance trade-off. The flexibility that enables rapid problem-solving and supports volunteer autonomy also weakens downward accountability and leaves important expectations, such as follow-up communication with the camps or criteria for task delegation, only partially specified. In practice, AAPSIB's coordinators must therefore act as informal accountability mediators, translating concerns between families, public partners, and Sahrawi authorities in the absence of more detailed procedural guidelines. This case illustrates how informal governance can sustain continuity, but only by concentrating interpretive and relational responsibility in the hands of key civil-society actors. The empirical evidence of consistent pre-departure medical examinations and host-family matching across years supports the proposition that coordination is effective when legitimacy and motivation are already aligned. Coordination thus operationalized the legitimacy-motivation nexus, converting moral commitment into stable organizational routines.

4. Resilience through Feedback Loops

These three dimensions reinforced one another through iterative feedback. Moral legitimacy inspired continuing volunteer motivation; repeated successful coordination, in turn, generated new legitimacy for public and private actors. For instance, the visibility of local solidarity events not only motivated host families but also legitimized public co-financing. Over time, the partnership produced a self-sustaining cycle in which successful coordination renewed the credibility and motivational energy that had initiated it. This process validates the triangular model represented in 〈Figure 1〉.

5. Scope and Transferability

While rooted in the Balearic Islands, the mechanisms observed here offer insights for other EiE MSPs. These insights can be operationalized in comparable

settings by adopting VeP's light meta-governance model: assigning a boundary NGO to coordinate volunteers and public services, using simple but recurring procedures (e.g., annual health checks, host-family screening), and relying on low-bureaucracy agreements with service providers. These design elements offer a practical template for EiE planners seeking to stabilize partnerships with limited resources. The VeP case shows that resilience emerges less from scale or resources than from the alignment of legitimacy bases, motivational asymmetries, and adaptive coordination. However, replication presupposes a dense civic environment and trustful relations among actors, conditions that may not exist in more fragmented or resource-scarce settings. Future comparative research could examine whether similar feedback dynamics operate in contexts where local associations are weaker or where institutional legitimacy is contested. Given the study's reliance on documentary sources from a single regional branch, these implications should be interpreted as context-sensitive design hypotheses rather than universal prescriptions. The mechanisms identified: complementary legitimacy, motivational reciprocity, and adaptive coordination, are analytically transferable but may not apply in settings with weaker civic networks or contested institutional trust.

Ⅵ. CONCLUSION AND IMPLICATIONS

This study examined how the VeP program in the Balearic Islands region in Spain has sustained its operations for more than a decade through the interaction of legitimacy, motivation, and coordination. The analysis of documentary sources showed that partnership resilience emerges not from abundant resources or rigid governance, but from the adaptive alignment of heterogeneous actors around shared moral and procedural legitimacy. In VeP, the combination of public accountability, civic trust, and light meta-governance enabled the partnership to endure budget fluctuations and institutional changes while maintaining continuity of support for Sahrawi children.

Theoretically, the findings refine research on MSPs and EiE governance by identifying the mechanisms through which legitimacy diversity stabilizes collaboration, motivational asymmetry sustains engagement, and adaptive coordination translates commitment into routine practice. Legitimacy based on humanitarian credibility

provided the moral foundation for long-term motivation, while repeated coordination routines (annual health checks, host-family matching, and volunteer training) converted those motivations into institutional memory. These mechanisms explain why VeP maintained coherence despite turnover among partner organizations.

Practically, several lessons arise for policy and program design. First, public agencies should formalize support through renewable framework agreements that guarantee logistical backing (e.g., medical screening, transport) without absorbing volunteer functions; this preserves flexibility while providing predictability. Second, municipalities and regional governments can use micro-grants or tax-deductible incentives to stabilize small civil organizations and private actors that provide relational and moral legitimacy to long-term humanitarian partnerships. Third, programs should establish simple feedback loops with origin-country partners. For example, short annual reports from Sahrawi health teams on children's follow-up could strengthen downward accountability without bureaucratic overhead. Future research could compare similar community-anchored MSPs to assess whether these mechanisms operate under weaker civic or institutional legitimacy conditions.

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Original Article

"Aid with a Face" Concept in Japan's Foreign Aid for Education*

Wenhong Fang**

Abstract

"Aid with a face" is a crucial implementation concept in Japan's foreign aid as it contributes positively to promoting the understanding of Japan, strengthening Japan's international presence, and shifting the focus of Japanese aid from quantity to quality. This study provides a comprehensive analysis of the origin and connotation of the "aid with a face" concept and summarizes its practices in Japan's foreign aid for education. The findings indicate that the "aid with a face" concept emerged in response to international criticism and domestic political-economic pressures concerning Japan's foreign aid after the 1990s. The concept

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entails implementing accountable, effective, and strategic foreign aid. The Japanese government operationalizes the approach in foreign aid for education by streamlining institutional relationships, clarifying aid policies, promoting multi-stakeholder participation, enhancing publicity efforts, and improving evaluation systems. This study illustrates Japan's broader transition from a request-based donor to a proactive strategic actor, thus offering a nuanced lens through which one can understand the evolution of contemporary international development cooperation. It highlights the persistent tension between national interests and developmental objectives pertaining to global aid systems.

Key Words: Japan, "Aid with a Face", Foreign Aid for Education, Practice

Ⅰ. INTRODUCTION

"Aid with a face",[1] as an important concept in Japan's foreign aid policy, frequently appeared in the official Japanese documents and policy discussions on aid reforms from the late 1990s to the early 21st century and continues to influence subsequent aid reforms. Former officials of Ministry of Foreign Affairs of Japan (MOFA) Iimura and Sunaga, as well as scholars Lloyd & Ishizuka, have interpreted the connotation of the "aid with a face" concept, noting that it has become a semi-official slogan of the Japan International Cooperation Agency (JICA) (Iimura, 2000). Its essence lies in linking aid to national interests (Sunaga, 2004), aiming, on one hand, to enhance Japanese public support for foreign aid by disclosing fund usage and expanding volunteer teams, and on the other hand, to shape a more positive image of Japan in recipient countries (Lloyd & Ishizuka, 2007). More scholars have directly applied this concept to their historical and policy analyses of Japanese foreign aid reforms without delving deeply into its conceptual connotation. Neither the concept's evolution into the 21st century nor its manifestation in specific aid sectors has been sufficiently addressed in existing scholarship, leaving a gap between the concept's policy significance and its academic examination. This study aims to delineate the origin and connotation of the "aid with a face" concept and, through the lens of foreign aid for education,[2] examine how this concept guides and manifests in Japan's policy design and project implementation. In doing so, this study makes three contributions to the existing literature: it offers a systematic account of the conceptual evolution of "aid with a face" from its origins through the 21st century; it proposes a three-dimensional analytical framework—comprising accountability, effectiveness, and strategic intent—that systematizes the concept's connotation; and it

1) The Japanese term '顔の見える援助' is translated in various ways. In international academic literature, however, the standard translation is 'aid with a face' (see, e.g., Lloyd & Ishizuka, 2007). This paper follows the academic convention while acknowledging the diversity of English renderings of the concept.

2) This paper uses 'foreign aid' throughout for consistency and historical accuracy. While Organisation for Economic Co-operation and Development (OECD) DAC member countries, including Japan, have increasingly adopted 'development cooperation' as the preferred term—formalized in Japan's 2015 Development Cooperation Charter—the policy documents and literature analyzed in this study predominantly used 'foreign aid.' This paper retains that terminology to reflect the historical context of the period under analysis.

demonstrates, through five institutional mechanisms in the education sector, how this policy concept is operationalized in practice, yielding findings that are potentially transferable to understanding Japan's foreign aid strategy more broadly and to comparative analysis of other donor countries. This study adopts a historical policy analysis approach. The primary sources consist of official Japanese government documents, including Official Development Assistance (ODA) charters, Medium-Term Policies on ODA, country-specific development cooperation policies, JICA position papers, and policy evaluation reports, covering the period from the 1990s to the present. These are supplemented by scholarly literature in Japanese, Chinese, and English. The education sector is selected as the focal field because it represents one of the most institutionally developed and well-documented areas of Japan's foreign aid practice, making it particularly well suited for tracing how a broad policy concept translates into concrete institutional arrangements and program design. In the current context of turbulent international landscape, expanding aid funding gaps, increased self-interest tendencies among traditional donor countries, and rise of South-South cooperation as a new driver of international development cooperation, how to make aid serve national strategic interests while maintaining development effectiveness and winning public support both domestically and abroad has become a common challenge faced by all countries. As a major donor country that has systematically promoted the strategization and visualization of aid, Japan's two-decade-long exploratory journey provides a longitudinal and panoramic illustration of this global challenge.

Ⅱ. THE ORIGIN OF THE "AID WITH A FACE" CONCEPT

In 1954, under the instruction of the United States, Japan joined the Colombo Plan and officially became a donor country. Japan's early foreign aid activities primarily served the purposes of war reparations, economic revitalization, and following allies. Its aid form mainly consisted of tied loans, meaning loans had to be used to purchase Japanese goods and services. Its aid approach was "request-based", meaning the Japanese government provided aid based on plans requested by recipient countries rather than proposing its own initiatives,

reflecting Japan's post-war non-interventionist diplomatic stance and its respect for recipient countries' sovereignty and development priorities. Entering the 1970s, the oil crisis, Nixon's New Asian Policy, and anti-Japanese sentiment internationally added new purposes to Japan's foreign aid, including securing resources, filling the power vacuum left by the US in Southeast Asia, and strengthening relations with trade partners. The leadership of Japan's foreign aid policy shifted from the Ministry of International Trade and Industry (MITI) to the MOFA (Yu, 1999). The significance of foreign aid as a tool to counter international anti-Japanese sentiment increased.

In 1970, Japanese Prime Minister Satō delivered a speech at the 25th-anniversary commemorative session of the United Nations, stating: Japan has no intention of developing armaments and is determined to utilize the surplus from its economic growth for world peace construction. Japan attaches importance to providing economic cooperation to developing countries (Satō, 1970). In 1972, the Japanese government announced the untying of loans at the third United Nations Conference on Trade and Development (UNCTAD) meeting. In 1977, Japanese Prime Minister Takeo Fukuda proposed the ODA Doubling Plan during a visit to Southeast Asia. Amidst a wave of anti-Japanese sentiment in the 1980s, Japan became the world's top aid donor in 1989. Japanese loans were largely untied, and Japan's foreign aid no longer concentrate on boosting exports but became a tool to showcase Japan's international contributions (Imazu, 2009).

Japan's foreign aid policies prior to the 1990s, while serving various political and economic interests, lacked a coherent overarching philosophy and were largely reactive in their official justification. Although Prime Minister Masayoshi Ōhira proposed in the early 1980s that Japan needed to get proactively involved in international affairs (Diet Proceedings Database, 1980), and the Comprehensive National Security Strategy issued in 1980 identified foreign aid as a crucial tool for Japan's comprehensive security (Yamaguchi, 2014), the Japanese government persistently justified its aid programs on grounds of humanitarianism and international responsibility. This stance was adopted because politicizing foreign aid remained domestically sensitive and was perceived as incompatible with Japan's "Peaceful Nation" image. In the international aid community, where national interest was paramount, Japan's position appeared deviant and thus drew

bewilderment and even derision [Ōkuma, 1999]. “Faceless Japan” was one such term of derision.

During 1990s, Japan’s foreign aid policy underwent significant changes. In 1991, the Gulf War broke out. Japan provided a massive $13 billion in financial aid to the US-led multinational forces and surrounding countries but did not receive corresponding international recognition. Japan’s foreign aid was criticized as “all money, no manpower” and “lack of guiding principles” (MOFA, 2004: 47). The status as a major aid donor coupled with the bitter lesson from the Gulf War drove the Japanese government to reconsider its foreign aid policy. In the government discussions between 1990 and 1992, the terms “faceless Japan” and “international contribution” appeared frequently (Ōyama, 2021). A broad consensus was that Japan attracted international criticism due to the lack of clear national objectives and a coherent philosophy. The previous request-based foreign aid policy was no longer suited to the new international environment. Japan needed to participate in international affairs more proactively and utilize foreign aid more strategically, turning it into a diplomatic trump card (Ōyama, 2021).

In 1992, the Japanese government issued its first ODA Charter, which preliminarily defined the principles and philosophy of Japan’s foreign aid. In the following years, the collapse of the bubble economy placed immense pressure on Japan’s foreign aid expenditures. In December 1994, the Fiscal System Council noted that, “given the unprecedented severity of fiscal situation, rather than pursuing quantitative increases in foreign aid, greater emphasis should be placed on prioritizing aid content, enhancing its effectiveness, and improving efficiency in implementation” (Fiscal System Council, 1995: 278). In 1997, Prime Minister Ryutaro Hashimoto announced cuts to the foreign aid budget. Following Prime Minister Hashimoto’s directive for a comprehensive review of foreign aid, the Economic Planning Agency, MITI, and MOFA each organized panels of experts and scholars to deliberate on reform measures.

During these discussions, long-standing views from the public sphere—that foreign aid should serve national interests and the people’s interests—were fully reflected. Ideas such as implementing “aid with a face” through measures like re-tying aid and ensuring that Japanese aid is delivered by Japanese personnel were repeatedly emphasized (Editor Department of International Development,

1997). In the Medium-Term Policy on ODA issued in 1998, implementing "aid with a face" became one of the fundamental principles of Japan's foreign aid, with the stated aim of "securing the support and understanding of the Japanese people and promoting understanding of Japan in recipient countries" (MOFA, 1999). Entering the 21st century, the term "aid with a face" still frequently appears in Japanese foreign aid-related policy documents and seminar reports.

Ⅲ. THE CONNOTATION OF THE "AID WITH A FACE" CONCEPT

Since its introduction in the 1990s, the connotation of the "aid with a face" concept has been enriched and developed. Overall, the concept encompasses three main dimensions. First, implementing accountable foreign aid to ensure transparency and public scrutiny. As a response to the criticism of "faceless Japan", the "aid with a face" concept emphasizes the disclosure of aid policies and information. Its purpose is to ensure that recipient countries and the international community have a full understanding of the objectives, philosophy, policies, implementation status, and effects of Japan's foreign aid, thereby enhancing the presence of Japanese aid. It also seeks to assist the shift from a passive, request-based aid implementation approach to a proactive, proposal-driven model initiated by Japan (Ōkuma, 2006). At the same time, given that foreign aid funds primarily come from taxpayers' money, the "aid with a face" concept underscores the Japanese government's accountability to the public. Foreign aid should not serve as a tool for any government department, politician, or company to pursue their own interests (Policy Initiative Forum, 2001). It must be implemented reasonably in a manner acceptable to taxpayers, who have the right to be informed.

Second, implementing effective foreign aid to achieve intended development outcomes sustainably and efficiently. The presence of Japan's foreign aid cannot rely solely on the scale of funding or the number of Japanese companies and products at aid sites. The quality of aid is equally important. Emphasis must be placed on the tangible impact of aid projects on the sustainable economic development of recipient countries, on providing Japanese citizens with direct opportunities to participate in aid activities, on facilitating the transfer of technology and knowledge through human

exchange, and on delivering timely assistance to developing countries in emergency situations (Policy Initiative Forum, 2001). Against the backdrop of economic stagnation and tightening aid budgets, improving the effectiveness and efficiency of aid implementation has become a central priority in Japan's foreign aid reforms. Efficient foreign aid not only fosters a sense of recognition toward Japan's assistance among recipient countries and the international community, helping to establish Japan's leadership in the global aid arena, but also helps to secure greater domestic support for Japan's foreign aid endeavors.

Third, implementing strategic foreign aid to align aid with Japan's diplomatic, security, and economic interests. Japan's foreign aid has, from its inception, served political and economic purposes such as promoting Japan's economic development, maintaining alliance relations, and shaping the image of a peaceful nation. However, the Japanese government long avoided discussing the relationship between foreign aid and national interests, and instead used euphemistic rhetoric such as humanitarianism, philanthropism, and interdependence to obscure reality (Ōkuma, 2006). Since the 1990s, the articulation of foreign aid strategy in official Japanese government documents has become increasingly specific and explicit, with foreign aid becoming a key component of the national security and economic development strategies of successive administrations. In the 2015 Charter, the Japanese government stated that the purpose of foreign aid is to "ensure Japan's peace and security, achieve Japan's further prosperity, establish a highly stable, transparent, and predictable international environment, and maintain an international order based on universal values" (MOFA, 2015). In terms of implementation principles, the Japanese government also proposed shifting from a "request-based" approach to a "proposal-based" or "co-creation-based" model (MOFA, 2015). In the new 2023 Charter, the Japanese government declared that "foreign aid is the most important diplomatic tool" and that it must be "implemented more strategically, continuously, and effectively" (MOFA, 2023).

Ⅳ. THE PRACTICE OF FOREIGN AID FOR EDUCATION "WITH A FACE"

The three dimensions outlined above—accountability, effectiveness, and

strategic intent—do not operate in isolation in practice. Rather, they manifest through an interlocking set of mechanisms that often serve multiple dimensions simultaneously. This section examines five such mechanisms through which the Japanese government has operationalized "aid with a face" in the field of aid for education. Institutional streamlining and evaluation reform primarily serve effectiveness, while publicity efforts and information disclosure are most directly oriented toward accountability. Policy clarification and multi-stakeholder participation serve all three dimensions—making aid more strategically coherent, operationally efficient, and publicly accountable. As each of the following mechanisms is examined, the reader is invited to bear these mappings in mind: the subsections are organized thematically, but their analytical significance lies in how each concretely operationalizes one or more of the three dimensions of "aid with a face."

1. Streamlining Institutional Relationships

Japan's foreign aid for education activities were initially implemented separately by over ten ministries and agencies, including MITI, MOFA, the Ministry of Agriculture, Forestry and Fisheries (MAFF), the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the Ministry of Posts and Telecommunications (MPT), the Ministry of Transport, and the Ministry of Health and Welfare (Kamibeppu, 2016). In 1962, the Japanese government established the Overseas Technical Cooperation Agency (OTCA) under MOFA to coordinate most bilateral technical aid activities of various ministries. This organization was reorganized into the JICA in 1974. MEXT, due to differences in aid philosophy with other ministries and inter-departmental power competition, failed to secure a place in either of these two organizations and thus was unable to exert significant influence (Kamibeppu, 2016).

Japan's foreign aid for education activities were operated under a dual system: ministries such as MOFA, MITI, MAFF, and MPT primarily handled educational aid related to war reparations and bilateral/multilateral technical aid, such as vocational training and infrastructure development, while MEXT was mainly responsible for UNESCO-related educational aid activities and the recruitment of

degree-seeking international students (Saitō, 2008). Cooperation between the two systems was very limited, primarily confined to the selection of experts, and MEXT did not have the authority to decide on expert appointments (Saitō, 2008).

In 1990, the United Nations Development Programme (UNDP) introduced the "Human Development Index", which elevates the importance of education in development agendas. In the same year, the World Conference on Education for All shifted the focus of international educational aid towards basic education. Japan's existing foreign aid for education system was unable to effectively mobilize domestic resources to meet the new demands of educational aid. This led to a thaw in relations between MEXT and JICA, with both sides engaging in more active cooperation in areas such as personnel exchanges, educational assistance policy formulation, international development talent cultivation, and the dispatch of experts and in-service teachers.

In 2003, the Japanese government transformed JICA into an Independent Administrative Institution (IAI) to facilitate its obligations in information disclosure and performance evaluation, thereby increasing the efficiency and transparency of foreign aid and garnering greater public support (Sunaga, 2004). In 2006, the Japanese Cabinet established the Overseas Economic Cooperation Council, consisting of the Prime Minister, the Chief Cabinet Secretary, the Minister for Foreign Affairs, the Minister of Finance, and the Minister of Economy, Trade and Industry, to set comprehensive strategies and basic policies for foreign aid. Under the leadership of this Council, MOFA became the core administrative body for Japan's foreign aid, responsible for planning and formulating aid policies, coordinating with other ministries and agencies, and managing grant aid operations. Through these reforms, the Japanese government alleviated the problems of low decision-making efficiency and inadequate reflection of overall national interests caused by dispersed jurisdiction (Wang & Yang, 2020).

In 2008, the Japanese government further merged the yen loan department of the Japan Bank for International Cooperation (JBIC), MOFA's grant aid department, and JICA to achieve four objectives (Prime Minister's Office of Japan, 2006): 1) Strengthening linkages between various operations to enhance aid effectiveness; 2) Cultivating personnel proficient in all aspects of foreign aid; 3) Improving JICA's international competitiveness and visibility; 4) Facilitating

understanding of Japan's foreign aid both domestically and internationally, particularly in recipient countries. The integrated JICA became the core implementing agency for Japan's foreign aid. Its scope of operations includes yen loan activities, approximately 70% of grant aid operations (Huang & Meng, 2011), and about 60% of technical assistance operations (Prime Minister's Office of Japan, 2006).

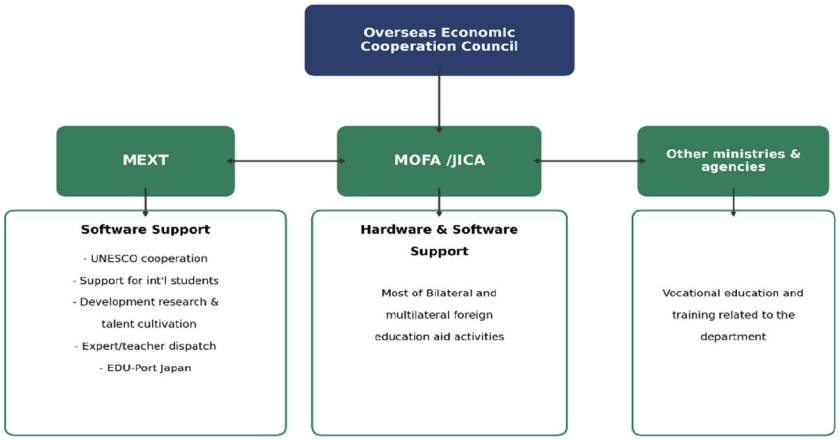
During Shinzo Abe's administration, by incorporating foreign aid policy into the national security strategy framework and controlling the appointment authority of the JICA President, the influence of the Prime Minister and the Cabinet was further strengthened (Zhao, 2018). In recent years, the Japanese government has also attempted to grant more policy-making and implementation authority to the grassroots level. For example, it has organized task forces comprising embassies abroad, field offices of aid agencies, local Japanese companies, and Japanese Non-Governmental Organizations (NGOs) to formulate country-specific aid policies and project plans, and to conduct aid evaluations (MOFA, 2020).

Through a series of reforms, Japan's foreign aid for education system has become more integrated, forming a parallel system led by MOFA with the participation of other ministries and agencies (〈Figure 1〉). In addition to communicating policies through regular meetings, the ministries and agencies also delegate tasks to each other as needed.

2. Clarifying Aid Policies

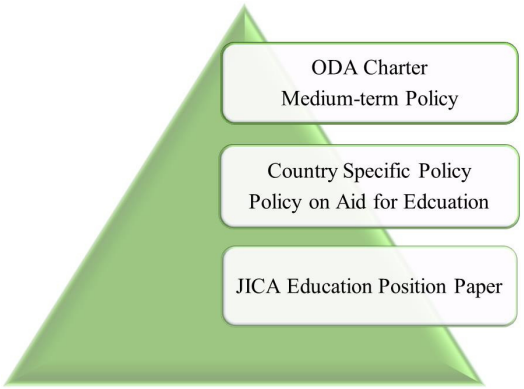
Japan's foreign aid for education policy framework is hierarchical (〈Figure 2〉). At the top are the ODA Charters. The medium-term policies are developed based on it. These top policies outline the basic philosophy, key issues, regional strategies, implementation principles, and institutional arrangements for Japan's foreign aid during different periods. Since 1992, the Japanese government has issued four charters and two medium-term policies. According to these documents, foreign aid for education serves as an important tool for advancing Japan's two fundamental aid principles—"self-help" development and "human security"—and is a branch of key themes such as "sustainable growth", "high-quality growth", and "poverty reduction".

〈Figure 1〉 Japan's foreign aid for education system



Note: 1) The figure is created by the author based on information from Kamibeppu (2016), MEXT (2023), and Saitō (2008).
2) MEXT, Ministry of Education, Culture, Sports, Science and Technology; MOFA, Ministry of Foreign Affairs; JICA, Japan International Cooperation Agency; EDU-PORT Japan, Japanese-style Education Overseas Promotion Projects.

〈Figure 2〉 Japan's policy framework for aid for education



Note: 1) The figure is created by the author based on documents published by MOFA (2008, 2016, 2022a) as cited above.
2) ODA, Official Development Assistance; JICA, Japan International Cooperation Agency; MOFA, Ministry of Foreign Affairs.

Below the top-level policies are country-specific aid policies and education aid policies. To enhance transparency in project selection and promote the consistency and coherence of government policies, the Japanese government began formulating Country Aid Plans for major recipient countries every five years starting in 1998. These plans elaborate on Japan's objectives, strategic significance,

priority areas, key issues, and implementation considerations for aid in each country. In 2010, the Country Aid Plan was renamed the Country Aid Policy, with plans to develop such policies for all recipient countries. In 2015, the Country Aid Policy was further renamed the Country Development Cooperation Policy. To date, the Japanese government has formulated Country Development Cooperation Policies for 132 countries (MOFA, 2022b), each accompanied by an annually updated Project Implementation Plan. For the African region, the Japanese government has consistently held the Tokyo International Conference on African Development (TICAD) since 1993. Japan's aid policies for Africa announced at this conference serve as guiding documents for education aid to Africa.

Unlike country-specific aid policies, Japan's policies on aid for education are released irregularly based on changes in international trends in aid for education and the evolution of Japan's own aid practices and philosophy. These policies are often announced at significant international events to garner greater global attention. In 2002, integrating the core elements of the United Nations Millennium Development Goals, the Dakar Framework for Action, and the Fast Track Initiative for Education for All with Japan's own aid philosophy and experience, the Japanese government launched the Basic Education for Growth Initiative (BEGIN) at the G8 Summit in Canada. BEGIN clarified Japan's priorities in basic education aid, including expanding access to education, improving education quality, and enhancing education management (MOFA, 2002b).

In September 2010, at the United Nations Millennium Development Goals Review Summit, the Japanese government released the Japan's Education Cooperation Policy 2010-2015, outlining its priorities in basic education, vocational education, higher education, and education in conflict- and disaster-affected countries (MOFA, 2011). In 2015, coinciding with the release of the United Nations Sustainable Development Goals, the Incheon Declaration, and the Education 2030 Framework for Action, the Japanese government revised the ODA Charter and announced its new overarching policy on foreign aid for education, the Strategy on Education for Peace and Growth, at the United Nations Sustainable Development Summit. Additionally, Japan spearheaded the adoption of the United Nations Decade of Education for Sustainable Development (2005-2014) by the UN in 2005. Although this is an international organization policy, the Japanese government was the proposer and primary promoter of the concept.

At the implementation level, JICA formulates position papers on aid for education based on newly released government policies. In 2010 and 2015, JICA issued two position papers respectively, outlining its objectives in aid for education, implementation methods, and priority areas. In 2007, 2015, and 2021, MOFA commissioned third-party evaluations of its three major policies on aid for education. The results indicated that Japan's policies on aid for education in general maintained high consistency across the top, middle, and implementation levels and aligned well with international frameworks for education development (MOFA, 2008, 2016, 2022a).

3. Promoting Multi-Stakeholder Participation

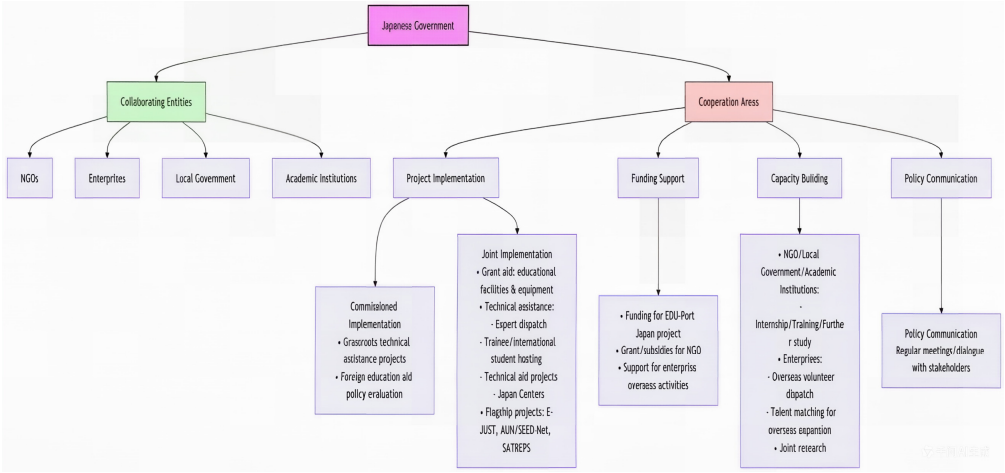
As early as 1998, the Japanese government emphasized in its Medium-Term Policy on ODA the need to promote public participation to implement "aid with a face" (MOFA, 1999). At the second ODA reform symposium hosted by the MOFA (2002a), public participation became a central topic, marking Japan's entry into an era of public involvement in foreign aid (MOFA, 2002a). At the Overseas Economic Cooperation Seminar organized by the Cabinet in 2006 and the Foreign Aid Implementation Methods Symposium held by the MOFA (2010), the Japanese government further proposed that Japan should strengthen cooperation among related institutions and adopt a "whole-of-Japan approach" to address emerging challenges in foreign aid (MOFA, n.d.). In the ODA Charters issued in 2015 and 2023, the government consistently highlighted the importance of private sector involvement in enhancing the effectiveness and competitiveness of Japan's foreign aid.

In the education sector, the Japanese government currently focuses on multi-faceted cooperation with NGOs, enterprises, local governments and academic institutions in areas of project implementation, funding support, capacity building, and policy communication (〈Figure 3〉).

1) Project implementation

The Japanese government entrusts NGOs, local governments, and academic institutions with implementing grassroots technical aid projects. It collaborates with NGOs, enterprises, local governments, and academic institutions on grant aid projects, including the construction of educational facilities and the procurement

〈Figure 3〉 Collaboration between the Japanese government and related entities



Note: 1) The figure is created by the author based on the information from JICA (n.d.) and MEXT (2026).
2) NGOs, Non-Governmental Organizations; E-JUST, Egypt-Japan University of Science and Technology; AUN/SEED-Net, ASEAN University Network/Southeast Asia Engineering Education Development Network; SATREPS, Science and Technology Research Partnership for Sustainable Development; JICA, Japan International Cooperation Agency; MEXT, Ministry of Education, Culture, Sports, Science and Technology.

of equipment. It also partners with these entities to implement technical aid projects, such as dispatching experts, hosting trainees and international students, carrying out technical aid initiatives, and establishing Japan Centers. Notable examples include the Egypt-Japan University of Science and Technology (E-JUST), the ASEAN University Network/Southeast Asia Engineering Education Development Network (AUN/SEED-Net), and the Science and Technology Research Partnership for Sustainable Development (SATREPS). Additionally, the government commissions academic institutions to evaluate its policies on aid for education.

2) Funding support

The Japanese government provides partial funding for projects like the Japanese-Style Education Overseas Promotion Project (EDU-Port Japan) implemented by schools (including academic institutions), enterprises, local governments, and NGOs. It offers grant funding to NGOs for education aid projects that align with Japan's foreign aid policies, such as the Country Development Cooperation Policy. It also provides subsidies for NGOs' planning,

research, and evaluation of foreign aid for education, as well as for seminars and lectures held domestically or abroad. Furthermore, the government funds Japanese enterprises' overseas market research, promotion, and pilot activities in the education sector, supports their overseas investment investigations, and provides financing for their investments.

3) Capacity-building

The Japanese government offers opportunities for NGO staff, local government employees, and students engaged in development studies and research at academic institutions to participate in internships, training, or further education at domestic or international aid/education institutions. It facilitates enterprise employees' volunteer work in countries where their companies plan to expand operations, connects companies with suitable Japanese or local talent for overseas business expansion, and conducts research on issues related to NGO and local government participation in foreign aid, sharing the findings with these stakeholders. The government also participates in foreign aid research associations formed by academic institutions and collaborates with them to organize foreign aid seminars and lectures.

4) Policy formulation

The Japanese government maintains dialogue with various institutions through regular meetings, solicits broad input from the private sector, and ensures that such input is reflected in foreign aid policies. Beyond institutional engagement, the government actively develops overseas volunteer programs and encourages ordinary citizens to contribute to foreign aid for education efforts.

To date, the Japanese government has established a two-way, mutually beneficial network encompassing public-private partnerships and private-private collaborations. Through these collaborations, the government has achieved improvements in aid effectiveness and efficiency, shared aid burdens, and enhanced public understanding of aid. In turn, the private sector has advanced its own international development through participation in foreign aid.

4. Enhancing Publicity Efforts

The Japanese government places great emphasis on promoting its foreign aid initiatives. It has designated October 6 as International Cooperation Day and hosts events like GLOBAL FESTA to increase the visibility of its foreign aid efforts. Additionally, the government strengthens foreign aid publicity through the following four approaches:

1) Promoting foreign aid education

To enhance young people's understanding of foreign aid, MOFA and JICA regularly organize online and in-person outreach sessions at domestic educational institutions and NGOs, featuring government staff, experienced aid practitioners, and foreign trainees in Japan. They also provide opportunities for students and teachers to visit JICA offices or participate in overseas training programs. Competitions such as essay contests on foreign aid for middle school students and education contests on foreign aid are also organized. Over the past decade, MOFA has conducted 318 in-person outreach sessions, while JICA organized 1,600 online and in-person sessions in 2013 alone, with approximately 140,000 participants (MOFA, 2025).

2) Strengthening media engagement

The Japanese government consistently works to promote its foreign aid through television, newspapers, magazines, social media, and other channels to deepen public understanding and support. MOFA publishes the White Paper on Development Cooperation annually, explaining the domestic and international context of Japan's foreign aid, its future direction, and reviewing the government's measures and achievements across various fields and regions in the previous year. MOFA and JICA also produce their own e-magazines on foreign aid, sharing the experiences of overseas staff and aid-related personnel. Japanese embassies abroad actively coordinate field visits for local media to Japanese development projects to enhance the visibility of Japan's aid through local news coverage. They also produce brochures systematically outlining bilateral cooperation history, principles, and specific project examples. These materials are distributed to government officials, media, and other stakeholders in partner countries, accompanied by thematic video content. In recent years, MOFA has increasingly

focused on using audiovisual productions for aid publicity, commissioning documentaries, TV dramas, talk shows, and animations such as Japanese Women Active in Turbulent Nations, Japanese People Shaping the World, The First Step, and Eagle Talon Squadron: ODA Rangers, Go! These works are broadcast on multiple platforms to engage public interest.

3) Information disclosure

The websites of MOFA and JICA play a central role in information disclosure. MOFA's website primarily provides macro-level information on foreign aid, including its history, achievements, budget, policies, project details, evaluation reports, and survey findings. JICA's website focuses on project implementation information, such as project overviews, outcomes, evaluations, survey reports, public engagement methods, and JICA position papers. Both websites are designed to be user-friendly, visually engaging, and comprehensive, with easy-to-navigate information systems. They offer multilingual services and are linked to social media platforms like Facebook and Twitter.

4) Facilitating dialogue and discussion

Domestically, the Japanese government organizes briefing sessions for businesses and NGOs on leveraging foreign aid for their development, public seminars on foreign aid trends and Japan's strategies, and roundtable discussions involving local governments, industries, universities, schools, and other stakeholders to disseminate aid-related information across society. Internationally, the government actively participates in and hosts dialogues with other donor countries and international aid organizations. It uses international conferences to announce foreign aid initiatives, declarations, and policies, thereby building Japan's influence and discourse in the field of foreign aid.

5. Improving evaluation mechanisms

To enhance the effectiveness and efficiency of foreign aid implementation and to earn the trust of the Japanese public and recipient countries (MOFA, 2021), the Japanese government continuously refines its foreign aid evaluation system. In the

field of foreign aid for education, MOFA is responsible for evaluating policies on aid for education and country-specific policies. In accordance with the Policy Evaluation Act enacted in 2001, MOFA also conducts ex-ante evaluations for grant aid projects exceeding 10 billion yen and ex-post evaluations for projects that have not commenced within five years or been completed within ten years (MOFA, 2021). JICA is responsible for evaluating education aid projects, including individual project evaluations and thematic evaluations (which involve cross-cutting assessments of multiple projects under a specific theme). The two agencies have clearly defined roles and produce separate annual evaluation reports. While over a dozen other government departments and agencies involved in foreign aid for education also conduct independent evaluations, the results of which are consolidated by MOFA in its annual evaluation report.

To ensure the timeliness of evaluations and their utility in guiding policy and project implementation, both MOFA and JICA adopt the Plan-Do-Check-Act (PDCA) cycle. Evaluations or monitoring are conducted during the formulation, implementation, and review stages of foreign aid policies and projects. Feedback is incorporated into policy-making and project execution through meetings and feedback reports. To facilitate public understanding of the outcomes of Japan's foreign aid and the government's policy improvements based on evaluations, all evaluation and feedback reports are published on the websites of MOFA and JICA.

To ensure objectivity and transparency, both MOFA and JICA employ a combination of internal and external evaluations. Internal evaluations are conducted by their respective evaluation departments and focus primarily on the formulation and implementation stages of aid policies and projects. External evaluations are commissioned to consulting firms selected through competitive bidding, with oversight and guidance from external experts, and are mainly conducted during the review stage after project completion. Additionally, MOFA may, as appropriate, commission recipient country governments or institutions to conduct evaluations or collaborate with other donor countries, international organizations, NGOs, and other entities on joint evaluations. JICA regularly convenes an External Expert Committee for Project Evaluation, consisting of external experts, to solicit advice on evaluation systems and guidelines. The bidding process for external evaluations and related contracts are fully disclosed

online for public oversight.

Regarding evaluation criteria, MOFA primarily assesses foreign aid for education policies and projects from development and diplomatic perspectives. Development-focused evaluations include three criteria: relevance of policies, effectiveness of outcomes, and appropriateness of processes. Diplomacy-focused evaluations include two criteria: diplomatic importance and diplomatic effectiveness. JICA evaluates foreign aid for education projects mainly based on the Development Assistance Committee (DAC) criteria, which include relevance, coherence, effectiveness, efficiency, impact, and sustainability. Both agencies pay attention to whether policies and projects in aid for education align with Japan's ODA Charters, country-specific policies, and other foreign aid policies; whether they meet the development needs and plans of recipient countries; whether they align with international frameworks and trends in foreign aid for education; whether they complement and harmonize with other aid initiatives or policies of other donor countries; whether they leverage Japan's comparative advantages; whether they achieve aid objectives with sustainable effects; and whether they employ reasonable formulation and implementation processes.

V. CONCLUSION

This study traces the origin and connotations of the concept of "aid with a face" and systematically examines its practice in the field of aid for education. It reveals that Japan's foreign aid underwent a profound strategic transformation after the 1990s. At the core of this transformation was the attempt to reshape aid from an international contribution based on the request principle into an active policy tool that serves clear national interests. Japan's two-decade journey in pursuing this transformation has been a complex process of grappling with internal contradictions and external constraints. The core tensions faced by Japan—between strategic demands and development ethics, between efficiency orientation and inclusive participation, and between national narratives and local perceptions—are not unique to Japan but represent universal challenges in the evolution of the global aid system. At its core, Japan's experience raises a question that is relevant to all donor countries: how to construct a philosophy of aid governance

that possesses both strategic awareness and a steadfast commitment to development.

This study has several limitations that point toward directions for future research. First, the analysis is confined to the education sector, which, while well-documented and institutionally mature, may not be fully representative of Japan's foreign aid practice as a whole. Other sectors such as infrastructure, health, and disaster relief may exhibit different dynamics in how the "aid with a face" concept is operationalized, and future research could extend this analysis accordingly. Second, the study focuses on policy design and institutional arrangements rather than on actual developmental outcomes; the long-term effects of Japan's approach on recipient countries remain an important and largely open empirical question. Third, this study examines Japan as a single donor country. Future research could apply this study's analytical framework comparatively to examining whether and how other major donor countries have undergone similar processes of aid strategization and visualization, and what structural or contextual factors account for differences across cases.

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Original Article

Does Institutional Quality Enhance the Influence of Official Development Assistance (ODA) on Domestic Investment? Evidence from West Africa

Nana Yaw Kwakye*

Abstract

This study examines the extent to which institutional quality enhances the influence of Official Development Assistance (ODA) on domestic investment in West Africa, a region that continues to rely heavily on external aid to finance development. Using a balanced panel dataset covering 13 West African countries from 1999 to 2023, this study employs fixed-effects regression models to explore the interaction between ODA and governance indicators, including political stability, government effectiveness, the rule of law, control of corruption, regulatory quality, and voice and accountability. The results indicate that ODA

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cexerts a positive and statistically significant influence on domestic investment, onfirming its potential role in stimulating capital acquisition. Moreover, institutional quality indicators, such as political stability and the rule of law, emerge as exerting significant influence on investment performance, underscoring the importance of governance in shaping the developmental effectiveness of aid. The findings show that ODA positively influences domestic investment, even under limited institutional conditions; however, its impact is substantially enhanced when institutional quality is high. Strong institutions improve aid management and allocation, enabling recipient countries to more effectively translate aid inflows into productive and sustainable investment outcomes. Thus, improving institutional quality across West Africa is essential for maximizing the long-term benefits of ODA and fostering sustainable domestic investment-led growth.

Key Words: Official Development Assistance (ODA), Domestic Investment, Institutional Quality, West Africa and Fixed Effect Method (Dynamic 2SLS)

Ⅰ. INTRODUCTION

Official Development Assistance (hereafter, ODA) has long served as a crucial instrument for promoting economic development in low-income regions, particularly in West Africa a region that continues to depend heavily on external aid to address persistent challenges like poverty, inadequate infrastructure, and political instability. ODA typically targets essential sectors, including agriculture, health, and education, with the aim of stimulating domestic investment defined as the accumulation of capital in physical assets, human capital, and productive enterprises (OECD, 2020).

Domestic investment remains vital for achieving long-term growth, driving employment creation, technological innovation, and overall economic resilience. Yet in West Africa, where gross fixed capital formation frequently remains below 20% of Gross Domestic Product (GDP), the conversion of ODA into sustainable domestic investment outcomes has been inconsistent, shaped significantly by local institutional and governance conditions (World Bank, 2020). The effectiveness of aid therefore depends on contextual factors, with institutional quality encompassing political stability, government effectiveness, control of corruption (COC), and the rule of law emerging as a central determinant of how aid translates into productive investment.

ODA can influence domestic investment through multiple channels, but its effectiveness is not automatic (Burnside & Dollar, 2000; Easterly, 2006). On the one hand, ODA has the potential to crowd in domestic and private investment by financing public goods such as infrastructure, education, and institutional reforms that reduce transaction costs and investment risks (Alesina & Dollar, 2000; North, 1990). In contexts characterized by weak governance and limited institutional capacity, aid may generate dependency, weaken fiscal discipline, or be diverted toward unproductive uses, thereby crowding out domestic investment (Burnside & Dollar, 2000; Collier, 2007; Easterly, 2006). Consequently, a growing body of development literature emphasizes that the impact of ODA is conditional upon the quality of political stability, government effectiveness, rule of law and accountability mechanisms (Collier, 2007; Knack, 2001). This conditional perspective provides the central motivation for the present study, which examines

whether institutional quality enhances the influence of ODA on domestic investment in West Africa.

Similarly, studies indicate that "aid for trade" initiatives yield more substantial productivity gains in countries with effective institutions, fostering export-oriented investment and industrial development (UNCTAD, 2022). Nonetheless, much of the existing research treats Sub-Saharan Africa as a homogenous entity, providing limited insight into West Africa's specific dynamics, where factors such as the Economic Community of West African States (ECOWAS) integration, Sahelian security challenges and varying governance capacities significantly shape aid outcomes.

Donor approaches in West Africa further reveal the diverse modalities of ODA and their implications for domestic investment. China, a leading non-traditional donor, channels large-scale concessional loans into infrastructure development. In Nigeria, for example, Chinese financing enabled the construction of the USD 1.5 billion Abuja Rail Mass Transit system, completed in 2018, which stimulated domestic investment in transport and logistics (Brautigam, 2020). During the 2014-2016 Ebola crisis, China provided approximately USD 120 million in emergency assistance to Sierra Leone and Liberia, contributing to health infrastructure strengthening (Cui, 2018).

In 2019, Korea International Cooperation Agency (KOICA), in collaboration with the World Health Organization (WHO), launched the *"Making Health Service Resilient with Quality and Preparedness for Emergency Response"* project in Liberia to support post-Ebola health system recovery and strengthen institutional resilience. The five-year initiative, funded at approximately USD 20-30 million, aimed to enhance emergency preparedness, service quality, and public health infrastructure. A situational assessment was completed in 2019, followed by a midterm evaluation in 2021 (World Health Organization, 2019, 2021).

European donors, led by the European Union, prioritize conditional and humanitarian aid, the EU in 2024, committed Euro35 million to Burkina Faso, Mali, and Niger for food security and sanitation projects, designed to stabilize rural economies and promote agricultural investment (European Commission, 2024). Moreover, EU support for ECOWAS trade policy reforms aims to foster better institutional frameworks and investment climates across the region.

Despite these varied initiatives, significant gaps remain in understanding how institutional quality specifically moderates the relationship between ODA and domestic investment in West Africa. While global and continental studies highlight the importance of governance in enhancing aid effectiveness, empirical evidence tailored to the West African context remains limited. Most existing analyses fail to account for donor heterogeneity, regional integration effects, and country-specific institutional dynamics.

Recent developments in West Africa further underscore the relevance of examining the aid-institution-investment nexus. Over the past decade, the region has experienced a marked increase in fragile and conflict-affected states, particularly in the Sahelian belt, accompanied by rising security threats, political instability and humanitarian pressures. These dynamics have altered the development cooperation environment, shifting ODA away from long-term investment financing toward emergency assistance, security-related support, and governance stabilization programs. At the same time, traditional project-based aid has increasingly been complemented by programmatic, budget-support, and institution-focused modalities. These changes heighten the importance of institutional quality, as fragile governance environments face greater challenges in translating aid inflows into productive domestic investment.

Also, the focus on West African countries is therefore analytically motivated rather than merely geographic. West Africa presents a distinctive combination of persistent aid dependence, weak domestic investment performance, and pronounced heterogeneity in institutional quality, political stability and governance capacity. While some countries in the region, such as Ghana, Senegal and Cabo Verde, have made notable progress in strengthening institutional frameworks and macroeconomic management, others continue to face chronic political instability, fragile state institutions, and post-conflict governance challenges. These contrasts make West Africa an appropriate empirical setting for examining whether and how institutional quality conditions the effectiveness of ODA in stimulating domestic investment. By focusing on this region, the study directly engages with the central development-policy question of why similar volumes of aid generate divergent investment outcomes across countries with differing institutional and political characteristics.

The paper addresses these gaps by empirically investigating the moderating role of institutional quality in the ODA-domestic investment nexus using panel data for 13 West African countries spanning a period of twenty-five (25) years. Employing fixed-effects estimation technique for the research, the study tests how ODA and institutional qualities influence domestic investment.

This study is divided into five sections. Section 2, following the introduction, presents an extensive review of the theoretical and empirical literature on ODA, institutional quality, and domestic investment, highlighting the key debates and conceptual frameworks underpinning the study. Section 3 details the methodology, including the model specification, variable definitions, data sources and econometric techniques employed. Section 4 provides and discusses the empirical results, analyzing how institutional quality moderates the relationship between ODA and domestic investment across West African countries. Section 5 concludes the paper by summarizing the key findings, drawing policy implications for both donors and recipient governments, and suggesting directions for future research. By following this structure, the paper seeks to provide a coherent and evidence-based understanding of how ODA, when effectively mediated by strong institutions, can catalyze domestic investment and foster sustainable growth in West Africa.

Ⅱ. LITERATURE REVIEW

The scholarly debate on the effectiveness of ODA has evolved considerably over the past several decades, marked by divergent perspectives and shifting theoretical paradigms. Early empirical studies primarily explored the direct nexus between aid inflows and macroeconomic performance, focusing on variables such as economic growth and capital formation. Some of these foundational works cast doubt on the efficacy of foreign assistance, arguing that aid is often fungible and fails to produce sustained increases in investment or growth within recipient economies (Boone, 1996).

In contrast, subsequent research suggested that ODA could enhance public sector performance and crowd in private investment by financing key infrastructure and human capital projects, thereby increasing the marginal

productivity of capital. This strand of inquiry highlighted the transmission mechanisms through which aid promotes growth particularly via public investment and the provision of social services (Mosley et al., 1987). More advanced econometric studies have since revisited these dynamics, offering evidence of a long-run positive association between development aid and economic growth, largely mediated by increased investment (Minoiu & Reddy, 2010).

The subsequent evolution of the debate gave rise to the influential "conditional effectiveness" hypothesis, which maintains that the impact of ODA depends critically on the quality of the recipient country's policy and institutional environment. This idea, most prominently advanced by Burnside & Dollar (2000), posits that aid achieves meaningful results only when underpinned by sound macroeconomic policies and robust institutions. The focus thus shifted from the sheer volume of aid to the governance structures that determine its utilization.

Supporting this position, Alesina & Dollar (2000) demonstrated that donor allocation decisions are shaped by recipients' policy frameworks and institutional quality, implying that good governance attracts higher aid inflows. Cross-country analyses further reinforced the moderating influence of institutional quality, indicating that aid's beneficial effects on growth are amplified in contexts characterized by strong rule of law, corruption control, and democratic accountability (Baliamoune-Lutz & Ndikumana, 2008). This conditional framework underscores that effective institutions are essential for ensuring that ODA is efficiently allocated and safeguarded against misuse, corruption, and inefficiency Wingo (2020).

Building on this conditional paradigm, a more specialized literature has emerged examining the direct relationship between ODA and domestic investment. In this view, foreign aid is expected to enhance public capital formation, thereby stimulating private sector investment a phenomenon often described as a "crowding-in" effect. Empirical evidence from Ouattara & Strobl (2008) supports this argument, indicating that aid can foster capital accumulation, particularly when analyzed through panel data techniques. Nonetheless, concerns about aid fungibility and disincentive effects complicate this relationship. Banda (2014) found that while foreign aid positively influences total investment in Eastern Africa, its impact on private domestic investment is conditional upon the

management of public expenditures.

Further studies have examined how ODA interacts with other forms of domestic financing. Wambaka (2022) analyzed how institutional quality mediates the relationship between bilateral and multilateral aid and domestic savings in Sub-Saharan Africa, while Awino & Kioko (2022) emphasized that budgetary fungibility remains a persistent obstacle to stable capital formation. Collectively, these studies underscore that the link between ODA and domestic investment is contingent on governance, transparency, and fiscal management efficiency.

However, the relationship between aid and institutions is inherently bidirectional. While strong institutions enhance the developmental impact of ODA, excessive aid dependence may erode institutional quality over time. Knack (2001) warned of a potential "Dutch Disease" of governance, wherein reliance on external aid weakens domestic accountability mechanisms by reducing governments' dependence on tax revenue and citizen oversight. As the World Bank (2017) emphasizes, effective institutions are not merely formal legal systems but frameworks that determine how power is exercised, and rules are enforced. Moreover, volatility in foreign aid flows can disrupt fiscal planning and governance, introducing further instability. Thus, ensuring that aid fosters rather than undermines institutional quality is a central challenge for both policymakers and researchers (Lemi et al., 2007).

The moderating role of institutional quality stands out as one of the most critical determinants of ODA's success in promoting domestic investment. Strong institutions characterized by transparent property rights, regulatory efficiency, and accountability help ensure that aid resources are productively invested rather than diverted. Burnside & Dollar (2000) provided empirical evidence that institutional quality significantly amplifies the marginal impact of aid on development outcomes. Similarly, Ojeka et al. (2024) highlighted that institutional strength mitigates the adverse effects of public debt on investment, underscoring its importance for macroeconomic stability. Addressing the endogeneity problem between aid and institutions where each influences the other remains a methodological challenge that necessitates the use of sophisticated econometric models to uncover true conditional effects (Kraay, 2012). The overall consensus across studies is that robust institutions are indispensable for maximizing the

developmental returns of ODA, including in emerging sectors such as technology (Asongu & Nwachukwu, 2018).

In the African context, the institutional dimension is particularly salient. Many African nations, especially in West Africa, face entrenched institutional weaknesses, fragility, and governance deficits that undermine aid effectiveness (Collier, 2007). Critics of the aid paradigm, such as Easterly (2006), argue that many ODA programs have failed because they overlook local institutional realities, leading to fragmented and unsustainable outcomes. Empirical evidence supports this concern: studies show that ODA promotes growth only when institutional quality surpasses certain thresholds. Recent investigations into Sub-Saharan Africa reaffirm that governance and institutional quality are decisive factors in determining both aid effectiveness and economic performance (Asogwa et al., 2023; Wu & Bote, 2025).

Focusing more narrowly on West Africa and the ECOWAS subregion provides a distinct analytical advantage, as these countries share similar colonial histories, governance challenges, and dependence on foreign aid. Research exploring the aid-Foreign Direct Investment (FDI) nexus within Africa highlights the critical role of institutional quality as a mediating factor a mechanism equally relevant to the aid-domestic investment relationship Asongu & Nwachukwu (2018). Recent findings indicate that institutional quality moderates the broader Influence of international financial inflows on the complexity of economies, emphasizing the importance of domestic institutional frameworks.

Studies such as Wang & Fillat-Castejón (2024) examine how aid-dependent institutions influence FDI inflows, providing insights into the political economy of aid dependence. Within the ECOWAS bloc, researchers have explored the relationship between institutional quality and various economic indicators (Iheonu et al., 2017), alongside studies investigating the direct impact of ODA on growth and welfare outcomes in West Africa (Davis, 2024).

This regional focus gains additional depth through empirical analyses centered on the West African Economic and Monetary Union (WAEMU), where advanced econometric techniques such as the Generalized Method of Moments (GMM) are applied to control for endogeneity and unobserved heterogeneity (Arellano & Bond, 1991; Bayale et al., 2022). These studies underscore the necessity of

institutional strength in channeling aid toward productive investments and inclusive financial development (Ezekwe et al., 2025; Ky et al., 2025). Collectively, this growing body of evidence supports the conclusion that institutional quality is the indispensable conduit through which ODA translates into domestic investment, serving as the critical filter that determines whether aid crowds in or crowds out private capital. Consequently, in the context of ECOWAS, strong governance frameworks are essential for achieving sustainable development outcomes and ensuring that ODA fulfills its intended developmental mandate (Ekpo, 2025; Onyekwere & Chikhungu, 2025).

Ⅲ. METHODOLOGY AND DATA

The empirical framework relies on a balanced panel of West African economies observed over a twenty-five (25) year period, with all data sourced from the World Bank to ensure reliability, consistency and cross-country comparability. The primary variables include Gross Fixed Capital Formation (GFCF), which serves as a proxy for domestic investment, ODA, GDP, natural resources, trade openness, mobile (telephone) penetration, education, and governance indicators. Specifically, the governance variables comprise Rule of Law (RL), Government Effectiveness (GE), Regulatory Quality (RQ), Political Stability (PS), COC, and Voice and Accountability (VA) all obtained from the Worldwide Governance Indicators (WGI) database, which builds upon the foundational work of Kaufmann & Kraay (2008). These indicators are derived from diverse surveys of enterprises, citizens, and experts, providing broad-based and comprehensive estimates of institutional quality across countries (Kaufmann & Kraay, 2008; World Bank, 2022).

The variables GDP, education, mobile penetration, trade openness, natural resources, and ODA are transformed into natural logarithms (L.lnGDP, lnEDUC, lnTEL, lnTRADEOPEN, lnNATRES, L.lnODA), while domestic investment is expressed as lnGFCF. Logging serves multiple econometric purposes—it stabilizes the variance of highly skewed variables, mitigates heteroskedasticity, and allows elasticity interpretation, where a 1 percent increase in an explanatory variable corresponds to a β percent change in domestic investment (Wheeler & Mody, 1992). Log transformations of education, mobile penetration, trade openness, and

ODA also enhance comparability across countries and over time, particularly in development panels where economic size and scale differ widely (Callen, 2008; Moosa, 2009).

To mitigate potential endogeneity and the issue of reverse causation affecting economic growth and domestic investment, GDP per capita and ODA are introduced in lagged form (L.lnGDP and L.lnODA), acknowledging that present investment decisions are often influenced by past rather than current income levels. To address zero or negative observations in the dataset, the inverse hyperbolic sine (asinh) transformation and log(x+1) adjustment are applied. These techniques preserve all data points including those with zero or missing values thereby maintaining data completeness and enhancing the robustness of the estimations. The asinh function mirrors the natural logarithm for large values but remains valid at zero, ensuring unbiased and consistent results. The empirical model is based on the Fixed Effects (FE) framework, expressed as:

$$Y_{it} = \alpha_i + \beta X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

where Y_{it} denotes domestic investment (lnGFCF), X_{it} represents explanatory variables, μ_i captures unobserved country-specific effects, λ_t and controls for time effects. This model specification draws from Globerman & Shapiro (2002), who emphasized the role of institutional quality in shaping capital flows and investment beyond traditional macroeconomic variables such as GDP and trade openness. The framework is extended in this study to incorporate ODA and governance indicators, examining whether institutional quality enhances the effectiveness of aid in stimulating domestic investment in West Africa. The study employed the FEs method rather than a dynamic approach like the GMM because GMM is less suitable for datasets with a long-time dimension, as it can suffer from instrument proliferation and bias due to persistent variables and autocorrelation. In contrast, the FE model effectively accounts for time-invariant heterogeneity and provides more reliable estimates of within-country changes over extended periods. Given Africa's growth trajectory and its relevance to economic development and the impact of foreign aid, the FEs approach was considered the most appropriate method for this research.

Accordingly, the modified regression equation for empirical estimation is specified as:

$$\ln GFCF_{it} = \alpha_i + \beta_1 \mathrm{L.ln}\ ODA_{it} + \beta_2 L.\ln GDP\ Per{\cdot}Cap_{it} + \beta_3 \ln\ NATRES_{it} + \beta_4 \ln\ TRADEOPEN_{it} + \beta_5 \ln\ TEL_{it} + \beta_6 \ln\ EDUC_{it} + \beta_7 COC_{it} + \beta_8 PS_{it} + \beta_9 GE_{it} + \beta_{10} RQ_{it} + \beta_{11} RL_{it} + \beta_{12} VA_{it} + \varepsilon_{it} \quad (2)$$

This formulation captures both the direct effects of ODA and the moderating influence of institutional quality, allowing an in-depth assessment of whether better governance amplifies the development impact of aid on domestic investment in West Africa.

The summary statistics of the primary variables used in this study are presented in 〈Table 1〉, covering 325 observations across selected West African countries from 1999 to 2023. The average value of ln_gdp (1.864) suggests moderate economic size across countries, though the wide range (−3.729 to 3.972) indicates substantial income disparities within the region. The mean of ln_gfcf (3.722) implies that domestic investment levels are fairly stable with limited variation (SD=0.595), reflecting gradual capital accumulation over time.

The mean value of ln_ODA (2.505) shows that foreign aid inflows remain significant, though unevenly distributed (SD=0.829). Trade openness (ln_tradeopen) has a relatively high mean (4.547), reflecting the region's dependence on international trade. Education (ln_education) and mobile penetration (ln_tel) exhibit moderate means of 1.893 and 1.253, respectively, suggesting progress in human capital and digital access, though disparities persist across countries and years.

〈Table 1〉 Summary of variables used for the estimation

Variables	Obs	Mean	Std. Dev.	Min	Max
L.ln gdp per Capita	325	1.864	1.263	−3.729	3.972
ln gfcf	325	3.722	.595	.289	5.401
ln tel	325	1.253	1.163	.002	4.555
ln tradeopen	325	4.547	.592	1.624	5.462
ln education	325	1.893	.514	.865	2.724
L. ln ODA	325	2.505	.829	.242	4.143

Note: 1) * p〈0.1.
2) ODA, Official Development Assistance.

Ⅳ. RESULTS

The 〈Table 2〉 presents the correlation matrix between domestic investment (ln_gfcf) and the explanatory variables. Domestic investment shows a strong positive and significant correlation with mobile penetration (ln_tel) (r=0.659, p〈0.01), suggesting that improvements in telecommunications infrastructure are closely linked to higher investment levels. Similarly, trade openness (r=0.301, p〈0.01) and education (r=0.129, p〈0.05) are positively associated with investment, highlighting their complementary roles in fostering economic productivity.

The correlation between ln_gdp and ln_gfcf is weak and insignificant (r=0.066), indicating limited short-term association between output size and investment. ODA (r=0.014, p〈0.01) shows only a marginal positive relationship with domestic investment, implying that aid alone may not strongly drive investment without effective mediating factors such as governance quality or institutional efficiency. Overall, multicollinearity concerns appear minimal among explanatory variables.

〈Table 3〉 reports the Variance Inflation Factor (VIF) results used to test for multicollinearity among explanatory variables. The VIF values range from 1.028 to 1.607, with a mean of 1.378, all well below the critical threshold of 10, indicating that multicollinearity is not a concern in the model. This confirms that the independent

〈Table 2〉 Correlation – dependent and explanatory variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) ln_gfcf	1.000					
(2) L.ln_gdp per capita	0.066	1.000				
	(0.238)					
(3) ln_tel	0.659*	−0.105	1.000			
	(0.000)	(0.059)				
(4) ln_tradeopen	0.301*	0.137*	−0.323*	1.000		
	(0.000)	(0.014)	(0.000)			
(5) ln_education	0.129*	−0.059	0.272*	0.115*	1.000	
	(0.020)	(0.287)	(0.000)	(0.037)		
(6) L.ln_ODA	0.014*	0.010	0.151*	−0.040	0.429*	1.000
	(0.003)	(0.859)	(0.006)	(0.469)	(0.000)	

Note: ODA, Official Development Assistance.

〈Table 3〉 Variance inflation factor

Variables	VIF	1/VIF
ln tel	1.607	.622
ln education	1.599	.625
ln naturalresources	1.414	.707
L.ln ODA	1.395	.717
ln tradeopen	1.223	.818
L.ln gdp per capita	1.028	.973
Mean VIF	1.378	

Note: VIF, Variance Inflation Factor; ODA, Official Development Assistance.

variables exhibit low multicollinearity, thereby supporting the stability and reliability of the regression estimates. Hence, the estimated parameters are expected to provide unbiased and efficient results.

This 〈Table 4〉 Model (1-7) presents fixed-effects estimates examining how ODA translates into domestic investment under varying levels of institutional quality in West Africa. Departing from conventional analyses that treat aid and institutions as independent determinants of investment, this study explicitly models institutional quality as a *conditioning mechanism* through which aid becomes productive. This interaction-based framework reveals patterns that remain largely unexplored in the empirical literature.

〈Table 4〉 The influence of ODA on domestic investment with institutional quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
L.ln_oda	0.219**	0.369**	0.0883*	0.295**	0.260**	0.219***	0.231**
	(0.119)	(0.123)	(0.158)	(0.154)	(0.109)	(0.0655)	(0.149)
L.ln_gdp per Capita	0.0385*	0.0416**	0.0301*	0.0409**	0.0341**	0.0264*	0.0215**
	(0.0216)	(0.0178)	(0.0198)	(0.0181)	(0.0195)	(0.0168)	(0.0162)
ln_natres	0.0951	0.162*	0.133*	0.149**	0.0989	0.0716	0.0748
	(0.0931)	(0.0805)	(0.0745)	(0.0585)	(0.0735)	(0.0675)	(0.0696)
ln_tradeopen	0.122	0.128	0.186*	0.104	0.102	0.119	0.0967
	(0.0781)	(0.0794)	(0.101)	(0.0680)	(0.0834)	(0.0796)	(0.0690)

〈Table 4〉 Continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
ln_tel	−0.240	−0.240	−0.0986	−0.225	−0.167	−0.151	−0.147
	(0.175)	(0.163)	(0.170)	(0.165)	(0.142)	(0.142)	(0.149)
ln_edu	0.0984*	0.131**	0.0630*	0.0756*	0.0302**	0.269***	0.117**
	(0.243)	(0.260)	(0.274)	(0.267)	(0.232)	(0.222)	(0.268)
COC	−0.765*						0.827
	(0.408)						(0.488)
oda_coc	0.347***						0.295**
	(0.106)						(0.135)
GE		0.951**					0.151
		(0.430)					(0.615)
Oda×Ge		0.451***					0.0544**
		(0.142)					(0.261)
PS			0.148*				0.541**
			(0.220)				(0.191)
Oda×_Ps			0.111*				0.164**
			(0.0766)				(0.0619)
RQ				0.864*			0.475
				(0.402)			(0.450)
Oda×Rq				0.422**			0.0596**
				(0.148)			(0.135)
RL					0.753*		0.00854
					(0.404)		(0.700)
Oda×Rl					0.374**		0.0217
					(0.124)		(0.220)
VA						1.004**	1.252**
						(0.343)	(0.700)
oda_×Va						0.451***	0.511*
						(0.114)	(0.237)
Constant	2.273**	1.918**	1.867*	2.118**	2.121**	2.553***	2.375**
	(0.824)	(0.734)	(0.907)	(0.764)	(0.772)	(0.584)	(0.808)

〈Table 4〉 Continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
Observations	325	325	325	325	325	325	325
R-squared	0.352	0.361	0.331	0.346	0.371	0.434	0.480
Number of countries	13	13	13	13	13	13	13

Note: 1) Country and year dummies are controlled for in all the regressions. Clustered standard errors by country are reported in parentheses.
2) *, **, and *** denote estimates that are statistically significant at the 10%, 5%, and 1% levels, respectively.
3) ODA, Official Development Assistance; COC, Control of Corruption; GE, Government Effectiveness; PS, Political Stability; RQ, Regulatory Quality; RL, Rule of Law; VA, Voice and Accountability.

Across all specifications, the coefficient on L.ln_oda is positive and statistically significant, ranging from 0.088 to 0.369. This implies that a 1 percent increase in ODA inflows raises domestic investment by up to 0.37 percent. Crucially, this positive effect persists even after controlling for institutional quality and interaction terms, suggesting that ODA in West Africa is not inherently distortive. Rather, its contribution to capital formation depends on the institutional environment in which it is deployed. This challenges the view that aid systematically crowds out domestic investment in low-income regions.

The principal contribution of this study lies in the interaction terms between ODA and institutional quality indicators, all of which are positive and statistically significant. These results demonstrate that institutional quality does not merely exert a direct influence on investment; it reshapes the marginal productivity of aid. For example, the interaction between ODA and COC in column (1) is 0.347 and significant at the 1 percent level, even though the standalone effect of corruption is negative. This divergence indicates that corruption primarily weakens the transmission of aid into productive investment rather than directly suppressing investment itself. Improvements in corruption control therefore unlock the investment potential of existing aid flows rather than requiring additional external financing.

This finding is particularly important in the West African context, where leakages, procurement inefficiencies, and rent-seeking have historically undermined aid effectiveness. The positive ODA×COC interaction suggests that even moderate

improvements in accountability and enforcement can significantly enhance the investment returns of aid, making anti-corruption reforms a high-impact complementary policy to aid inflows. GE exhibits one of the strongest interaction effects. In column (2), the ODA xGE interaction reaches 0.451, indicating that aid-financed expenditures are substantially more investment-enhancing in countries with capable public administrations. This highlights that institutional quality matters not only for policy design but also for implementation. In West Africa, where development constraints often reflect execution failures rather than funding shortages, administrative capacity emerges as a critical determinant of whether aid supports long-term capital formation.

PS, RQ, and RL further reinforce this conditioning role of institutional quality. Although their direct effects vary, the positive interaction terms indicate that institutional predictability and legal enforcement reduce uncertainty surrounding aid-financed projects. This allows aid to crowd in domestic investment by improving investor confidence and lowering transaction costs, rather than being absorbed into short-term or non-productive expenditures.

The most striking result emerges from VA, which records the largest interaction effects of 0.451 and 0.511 in columns (6) and (7). These magnitudes suggest that democratic oversight and citizen participation substantially amplify the investment impact of ODA. In West Africa, where elite capture and politically motivated spending remain salient concerns, stronger voice and accountability mechanisms appear to redirect aid toward investment-enhancing public goods. This reframes inclusive institutions as economic multipliers of aid rather than purely political attributes.

Relative to earlier studies such as Iheonu (2019) and Khalid et al. (2023), which emphasize the direct role of institutional quality in promoting investment, this study makes a distinct contribution by showing that institutional quality also conditions the effectiveness of external finance. By explicitly modelling interaction effects, the analysis explains why similar levels of aid produce markedly different investment outcomes across countries.

The findings indicate that ODA is not a uniform policy instrument. Its effectiveness in stimulating domestic investment in West Africa depends critically on institutional quality, particularly COC, government effectiveness, and voice and accountability. This interaction-based insight offers a novel and compelling contribution to the aid-investment literature and provides clear guidance for both

donors and policymakers seeking to maximize the developmental impact of aid. This finding is broadly consistent with existing literature. To deepen the analysis of how institutional quality and ODA shape domestic investment in West Africa, the study further stratifies countries in the region into those with relatively high institutional quality and those with relatively low institutional quality. This classification allows for a more precise assessment of how variations in institutional environments condition the effectiveness of aid and, in turn, influence domestic investment dynamics.

〈Table 5〉 presents evidence on the relationship between ODA and domestic investment in West African countries with relatively high institutional quality. The results consistently show that ODA plays a supportive role in promoting domestic

〈Table 5〉 The influence of official development assistance (ODA) on domestic investment in west african economies with high institutional quality

Variables	COC	GE	PS	RQ	RL	VA
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
L.ln_oda	0.148***	0.114**	0.0458**	0.0827**	0.204***	0.0576***
	(0.0553)	(0.0530)	(0.0543)	(0.0479)	(0.0506)	(0.0517)
L.ln_gdp per capita	0.0340**	0.0292*	0.0114**	0.0195**	0.00732*	0.0121**
	(0.0212)	(0.0213)	(0.0192)	(0.0184)	(0.0200)	(0.0198)
ln_natres	0.179**	0.213***	0.146**	0.251***	0.00593*	0.0294*
	(0.0700)	(0.0492)	(0.0677)	(0.0617)	(0.0703)	(0.0820)
ln_tradeopen	0.0890	0.116	0.170	0.108	0.00548	0.659***
	(0.125)	(0.111)	(0.134)	(0.110)	(0.141)	(0.136)
ln_tel	−0.205	0.257**	−0.0648	−0.410***	−0.0531	−0.227**
	(0.144)	(0.112)	(0.131)	(0.110)	(0.119)	(0.104)
ln_edu	0.557***	0.679***	0.983***	0.0128	0.812***	0.168
	(0.152)	(0.155)	(0.177)	(0.140)	(0.138)	(0.161)
Constant	1.662***	1.451**	0.573	2.934***	1.757***	0.323
	(0.610)	(0.569)	(0.686)	(0.528)	(0.638)	(0.601)
Observations	162	162	163	162	163	162
R-squared	0.288	0.360	0.300	0.299	0.299	0.247

Note: 1) All regressions include country and year fixed effects. Clustered standard errors at the country level are reported in parentheses.
2) *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

investment when governance structures are strong. Across the six specifications, the coefficient on lagged ODA remains positive and statistically significant, with estimated values ranging from 0.046 to 0.204. In practical terms, this implies that a 1 percent increase in ODA inflows is associated with an increase in domestic investment of between about 0.05 percent and 0.20 percent. The relatively larger coefficients observed in columns (1) and (5), at 0.148 and 0.204 respectively, suggest that the investment response to aid is particularly strong under certain institutional dimensions, reinforcing the argument that effective institutions enhance aid efficiency.

Economic performance, captured by lagged GDP, also contributes positively to domestic investment in all models. The estimated coefficients range from 0.007 to 0.034, indicating that higher levels of economic activity support capital formation even within this high-institutional-quality subgroup. For example, in column (1), a 1 percent increase in GDP is associated with a 0.034 percent rise in domestic investment, highlighting the complementary relationship between growth and investment in well-governed economies.

Natural resources exhibit a generally positive and statistically significant effect on domestic investment. Coefficients such as 0.179 in column (1) and 0.251 in column (4) suggest that resource endowments, when managed under stronger institutional frameworks, can reinforce investment rather than hinder it. Education emerges as another important driver, with large and significant coefficients in several specifications. Notably, the coefficient reaches 0.983 in column (3) and 0.812 in column (5), indicating that improvements in human capital substantially strengthen domestic investment outcomes in countries with higher institutional quality. Trade openness shows a more nuanced pattern. While it is insignificant in most models, it becomes strongly positive in column (6), where the coefficient of 0.659 is significant at the 1 percent level. This finding suggests that trade openness may stimulate investment only when combined with particular institutional characteristics. The telecommunications variable displays mixed results, with coefficients ranging from −0.410 in column (4) to 0.257 in column (2), reflecting heterogeneous effects of infrastructure and technology even among countries with relatively strong institutions.

The explanatory power of the models is moderate, with R-squared values between 0.247 and 0.360, which is reasonable given the inclusion of country and year fixed effects. Taken together, the results in 〈Table 5〉 support the institutional conditionality hypothesis advanced by Burnside & Dollar (2000) and are consistent

with the findings of Hansen & Tarp (2001) and Minoiu & Reddy (2010). They indicate that in West African economies with high institutional quality, ODA is more likely to be translated into productive domestic investment, thereby reinforcing long-term development outcomes. The study further extends the analysis to countries within the region characterized by relatively weak institutional quality, which constitute the majority of West African economies, in order to assess how ODA influences domestic investment under such institutional conditions.

〈Table 6〉 reports the regression results for West African economies characterized

〈Table 6〉 The influence of official development assistance (ODA) on domestic investment in west African economies with low institutional quality

Variables	COC	GE	PS	RQ	RL	VA
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
L.ln_oda	0.169*	0.156**	0.144*	0.168**	0.204*	0.161*
	(0.0694)	(0.0711)	(0.0717)	(0.0769)	(0.0731)	(0.0683)
L.ln_gdp per capita	0.0530**	0.0516**	0.0769*	0.0600**	0.0614*	0.0504**
	(0.0219)	(0.0220)	(0.0227)	(0.0243)	(0.0216)	(0.0211)
ln_natres	0.00212	−0.0178	−0.102	−0.0584	−0.0154	0.170***
	(0.0944)	(0.0889)	(0.0990)	(0.109)	(0.0783)	(0.0511)
ln_tradeopen	0.0770	0.102	0.0204	0.136	0.0851	0.0150
	(0.0875)	(0.0903)	(0.0829)	(0.0964)	(0.0821)	(0.0820)
ln_tel	−0.0384	−0.285*	−0.207	−0.0468	−0.306**	−0.177
	(0.140)	(0.152)	(0.165)	(0.163)	(0.149)	(0.157)
ln_edu	0.378*	0.262	−0.178	0.780***	0.199	0.266
	(0.223)	(0.226)	(0.205)	(0.243)	(0.257)	(0.216)
Constant	2.879***	3.242***	4.634***	2.023***	3.591***	3.033***
	(0.680)	(0.642)	(0.630)	(0.750)	(0.692)	(0.617)
Observations	163	163	162	163	162	163
R-squared	0.102	0.126	0.122	0.152	0.171	0.241

Note: 1) Each regression model includes country and year fixed effects to account for unobserved heterogeneity.
2) Standard errors are clustered by country and presented in parentheses.
3) *, **, and *** represent significance at the 10%, 5%, and 1% thresholds, respectively.
4) COC, Control of Corruption; GE, Government Effectiveness; PS, Political Stability; RQ, Regulatory Quality; RL, Rule of Law; VA, Voice and Accountability.

by low institutional quality, thereby complementing the earlier analysis focused on relatively stronger governance environments. By restricting the sample to countries with weaker institutions, the table allows for a clearer assessment of whether and to what extent ODA can still influence domestic investment under adverse governance conditions. Overall, the explanatory power of the models remains modest, with R-squared values ranging from 0.10 to 0.24, reflecting the greater structural constraints and heterogeneity typical of low-institutional-quality settings.

Contrary to the view that aid is entirely ineffective in weak governance environments, the results show that the coefficient on ln_ODA is positive and statistically significant across all specifications. The estimated coefficients range from 0.144 to 0.204, depending on the institutional dimension considered. For instance, in the rule of law specification, a one percent increase in ODA is associated with approximately a 0.20 percent increase in domestic investment, while under government effectiveness and regulatory quality the corresponding effects are about 0.16 to 0.17 percent. These magnitudes are smaller than those observed in high-institutional-quality contexts, but they nonetheless indicate that ODA continues to crowd in domestic investment even where governance structures are relatively weak. This finding is particularly important given that the majority of West African countries fall within this low-institutional-quality category.

The control variables behave largely in line with expectations. GDP per capita remains positive and statistically significant across all models, even under weak institutional conditions. Natural resource endowments display mixed effects, becoming strongly positive and significant only in the voice and accountability specification, where the coefficient reaches 0.170 at the one percent level. Trade openness remains positive but statistically insignificant, implying that openness alone does not overcome institutional deficiencies. Telecommunications infrastructure shows negative and occasionally significant coefficients, particularly under government effectiveness and rule of law, highlighting persistent inefficiencies in translating infrastructure access into productive investment. Education yields mixed results, with a notably large and significant positive effect under regulatory quality, indicating that even limited improvements in regulatory frameworks can enhance the investment returns to human capital.

Taken together, the results suggest that while weak institutions constrain the effectiveness of ODA, they do not eliminate its influence on domestic investment.

This nuance refines earlier arguments in the literature. Boone (1996) and Rajan & Subramanian (2008) emphasize that poor governance undermines the investment and growth effects of aid, while Bräutigam & Knack (2004) and Dreher et al. (2018) highlight how corruption and low accountability weaken aid effectiveness. The evidence in 〈Table 6〉 is consistent with these perspectives in that the estimated ODA coefficients are smaller than those observed in stronger institutional environments. However, the results also extend the literature by showing that aid is not entirely neutral or counterproductive in weakly governed West African economies. Instead, ODA continues to exert a positive, albeit attenuated, effect on domestic investment.

Importantly, certain institutional dimensions appear to provide channels through which ODA remains effective even at low levels of institutional quality. The relatively stronger ODA coefficients under rule of law, regulatory quality, and voice and accountability suggest that marginal improvements in legal credibility, regulatory clarity, and civic oversight can significantly enhance the investment response to aid. This is particularly relevant for West Africa, where comprehensive institutional reform is often slow, but incremental gains in specific governance areas may still yield tangible investment benefits.

The use of interaction terms, alongside sub-sample analysis, is justified by the fundamentally different nature of the aid-investment relationship across varying institutional regimes. The comparison between high- and low-institutional-quality contexts shows a clear shift in both the magnitude and efficiency of ODA's impact. Estimating separate models allows this non-linear relationship to be more transparently identified and yields more precise policy implications.

The positive ODA×COC coefficient (0.347, $p<0.01$) demonstrates that anti-corruption reforms amplify aid effectiveness by 34.7%, justifying the recommendation to strengthen anti-corruption agencies. Similarly, the ODA×GE coefficient (0.451, $p<0.01$) indicates that each unit improvement in government effectiveness increases ODA's investment impact by 45.1%, supporting the prioritization of capacity building within public institutions. Furthermore, the differential effects between high quality institutional settings in 〈Table 5〉, with coefficients ranging from 0.148 to 0.204, and low-quality settings in 〈Table 6〉, with coefficients between 0.144 and 0.204, justify differentiated aid modalities based on governance context.

Overall, the findings underscore that foreign aid becomes more productive when complemented by targeted institutional improvements, consistent with the applied policy econometrics and foreign aid literature (Acemoglu & Robinson, 2012; Dollar & Kraay, 2003; Rodrik, 2008; Wooldridge, 2010).

V. CONCLUSION AND POLICY RECOMMENDATION

Policy implications are derived through a structured interpretation of the empirical findings, which is in line with best practices in evidence-based policymaking. Recommendations related to strengthening development cooperation frameworks stem from the observed heterogeneity in estimated effects across institutional and governance conditions. Prior studies show that policy prescriptions are most credible when conditional on empirical contexts revealed by the data (Andrews et al., 2017; Angrist & Pischke, 2009). Accordingly, the study links statistically robust results to targeted policy actions, including adaptive project implementation and institutional capacity building. This approach mirrors established development economics research emphasizing empirically driven, context specific recommendations (Besley & Persson, 2011; OECD, 2019).

The findings indicate that ODA has a generally positive effect on domestic investment in West Africa, even in countries with relatively weak institutional frameworks. However, the strength and effectiveness of this relationship are significantly enhanced in countries with higher institutional quality. In well governed economies such as Ghana, Cape Verde, and Senegal, strong institutions enable ODA to translate more efficiently into productive domestic investment. By contrast, in weaker institutional environments, governance deficiencies constrain the effective use of aid, limiting its impact on capital formation.

These results are consistent with the institutional theories of North (1990) and Acemoglu & Robinson (2012), which emphasize the central role of institutions in shaping economic outcomes. Governance indicators including PS, RL, and GE emerge as key channels through which ODA supports domestic investment, aligning with the arguments of Knack & Keefer (1995). While ODA can stimulate investment in the short to medium term, excessive dependence on aid without institutional reform risks undermining long term development, as cautioned by Bauer (1984),

Easterly (2006), and Moyo (2009). Moreover, the positive role of education highlights the importance of complementary investments in human capital and institutional capacity to maximize the developmental returns to aid.

For recipient countries, the findings suggest that reducing excessive dependence on foreign aid requires a sequenced reform strategy rather than abrupt disengagement from ODA. First, governments should prioritize institutional reforms that directly affect public investment efficiency, including (i) strengthening public financial management systems to ensure transparent budgeting and procurement of aid-funded projects, (ii) enhancing the independence and capacity of anti-corruption agencies to reduce leakage of external resources, and (iii) improving judicial enforcement of contracts and property rights to increase investor confidence (Acemoglu et al., 2001; Rodrik et al., 2004).

Second, aid should be increasingly aligned with domestic revenue mobilization and institutional capacity building, rather than recurrent expenditure financing. Recipient governments should use ODA strategically to modernize tax administration systems, digitize revenue collection, and strengthen customs and regulatory agencies. By doing so, aid can serve as a temporary catalyst for expanding fiscal space, allowing countries to gradually substitute foreign assistance with domestically generated resources. This approach directly addresses concerns of aid dependency while preserving the short- to medium-term investment-enhancing role of ODA identified in high-governance West African economies (IMF, 2015).

For donor countries and institutions like KOICA among others, the results imply that aid effectiveness depends not only on the volume of assistance but also on how aid is structured and conditioned. Donors should increasingly shift toward performance-based and institution-focused aid modalities, where disbursements are explicitly linked to improvements in governance indicators such as government effectiveness, rule of law, curbing corruption and political stability (Burnside & Dollar, 2000; Knack, 2001). In weak institutional settings, donors should emphasize technical assistance, policy advisory support and embedded capacity-building programs rather than large-scale capital transfers that risk misallocation. Conversely, in countries with stronger institutional frameworks, donors can scale up investment-oriented aid, particularly in infrastructure, education and trade facilitation, where the crowding-in effects on domestic investment are most pronounced.

This model can be interpreted as mirroring the development experience of the Asian Tigers, specifically South Korea, Taiwan, Hong Kong and Singapore, with particular emphasis on South Korea's pathway to economic transformation. The East Asian experience demonstrates that rapid and sustained growth was not accidental, but the outcome of deliberate state-led strategies that combined selective government intervention, export-oriented industrialization, and disciplined macroeconomic management (Shirley, 2008). In the case of South Korea, development was underpinned by strong institutional capacity, effective coordination between the state and the private sector, and the strategic mobilization of external resources to support industrial upgrading, human capital formation, and large-scale infrastructure development (Amsden, 1989).

The policy implication is not that ODA should be withdrawn from poorly governed states, but that aid strategies must be differentiated according to institutional conditions. The study therefore contributes to the literature by demonstrating that a "one-size-fits-all" aid approach is suboptimal in West Africa. Instead, aligning aid design with institutional quality can transform ODA from a potential source of dependency into an effective instrument for sustainable, investment-led development.

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Appendix

〈Appendix Table A1〉 Robustness test: Dynamic 2SLS with fixed effect ODA influence on domestic investment with institutional quality

ln_gcf	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
L.gcf	.534	.14	3.82	0	.26	.807	***
ln_oda	.044	.068	0.64	.053	.009	.178	**
ln_gdp	.023	.013	1.80	.071	−.002	.048	*
ln_natres	.057	.043	1.34	.182	−.027	.141	
ln_tradeopen	.043	.037	1.17	.243	−.029	.116	
ln_tel	−.147	.072	−2.04	.042	−.288	−.006	**
ln_edu	.133	.152	0.88	.381	−.165	.43	
COC	.474	.248	1.91	.057	−.961	.013	*
oda_coc	.245	.079	3.08	.002	.089	.4	***
GE	.429	.379	−1.13	.257	−1.171	.313	
oda_ge	.159	.14	1.13	.257	−.115	.432	
PS	.379	.132	2.87	.004	.121	.638	***
oda_ps	.143	.052	2.74	.006	.246	.041	***
RQ	.788	.207	3.81	0	.382	1.193	***
oda_rq	.302	.093	3.24	.001	.484	.119	***
RL	−.051	.317	−0.16	.873	−.671	.57	
oda_rl	.079	.127	0.63	.532	−.169	.328	
VA	−.128	.203	−0.63	.528	−.526	.27	
oda_va	.012	.074	0.17	.868	−.133	.158	
Constant	1.297	.537	2.42	.016	.245	2.35	**
Mean dependent var	3.715	SD dependent var	0.414				
Overall r-squared	0.520	Number of obs	299				
Chi-square	3,943.454	Prob 〉 chi^2	0.000				
R-squared within	0.626	R-squared between	0.417				

Note: 1) Tests of endogeneity.
H0: Variables are exogenous.
Robust score $chi^2(1)$=.033294 (p=0.00152).
Robust regression F(1,228)=.031501 (p=0.01093).
2) * p〈0.1, ** p〈0.05, *** p〈0.01.
3) ODA, Official Development Assistance; COC, Control of Corruption; GE, Government Effectiveness; PS, Political Stability; RQ, Regulatory Quality; RL, Rule of Law; VA, Voice and Accountability.

〈Appendix Table A1〉 Continued

First-stage regression summary statistics adjusted			Partial		Robust	
R-sq.	R-sq.	R-sq.	F(1,229)	Prob	〉	F
0.898	0.894		0.836	43.422		0.000

This robustness check employs a Fixed Effects Two-Stage Least Squares (FE-2SLS) specification to address potential endogeneity between ODA and domestic investment arising from reverse causality and donor allocation behavior, while controlling for unobserved time-invariant country-specific characteristics. By instrumenting ODA, this approach isolates exogenous within-country variation in aid flows, thereby strengthening the causal interpretation of the estimates. The highly significant coefficient on the lagged dependent variable confirms the strong persistence of domestic investment over time. The results indicate that ODA exerts a modest direct effect on domestic investment; however, the interaction terms between ODA and institutional quality measures are consistently positive and statistically significant, particularly for control of corruption, political stability, and regulatory quality. These findings suggest that foreign aid contributes meaningfully to domestic investment primarily in environments characterized by strong institutional frameworks.

〈Appendix Table A2〉 Descriptive overview of institutional quality in West Africa

Country	COC	GE	PS	RQ	RL	VA
Benin	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Burkina Faso	Low	Low	Low	Low	Low	Low
Cabo Verde	High	High	High	High	High	High
Côte d'Ivoire	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Gambia	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Ghana	High	High	Moderate	High	High	High
Mali	Low	Low	Low	Low	Low	Low
Mauritania	Low	Low	Low	Low	Low	Low
Niger	Low	Low	Low	Low	Low	Low
Nigeria	Low	Low	Low	Moderate	Low	Moderate
Senegal	High	High	Moderate	High	High	High
Sierra Leone	Low	Low	Low	Low	Low	Low
Togo	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Note: 1) 'High' denotes relatively strong institutional performance within the West African context, 'Moderate' reflects mixed or improving institutional capacity, and 'Low' indicates persistent institutional weaknesses. This qualitative classification is consistent with average WGI trends reported by the World Bank.
2) WGI, Worldwide Governance Indicators.

Appendix Table A2 presents a descriptive overview of institutional quality across the West African countries included in the study. The assessment is based on the six Worldwide Governance Indicators: Control of Corruption (COC), Government Effectiveness (GE), Political Stability (PS), Regulatory Quality (RQ), Rule of Law (RL), and Voice and Accountability (VA). Rather than reporting numerical scores, the table provides a qualitative characterization (high, moderate, or low) reflecting each country's average institutional performance over the study period of 25 years.

〈Appendix Table A3〉 Variable definitions and sources

Variables	Description	Measurement	Source (WDI)
L.ln_oda	Lagged official development assistance	Natural log (lagged one period)	World Development Indicators
L.ln_gdp per capita	Lagged GDP (economic size)	Natural log (lagged one period)	World Development Indicators
ln_natres	Natural resource rents	Natural log of % of GDP	World Development Indicators
ln_tradeopen	Trade openness	Natural log of (exports+imports)/GDP	World Development Indicators
ln_tel	Telecommunication infrastructure	Natural log of telephone subscriptions per 100 people	World Development Indicators
ln_edu	Human capital	Natural log of average years of schooling	World Development Indicators
COC	Control of corruption	Governance index	World Development Indicators
ODA×COC	ODA×control of corruption	Interaction between ln_oda and COC	World Development Indicators
GE	Government effectiveness	Governance index	World Development Indicators
ODA×GE	ODA×government effectiveness	Interaction between ln_oda and GE	World Development Indicators
PS	Political stability and absence of violence	Governance index	World Development Indicators
ODA×PS	ODA×political stability	Interaction between ln_oda and PS	World Development Indicators
RQ	Regulatory quality	Governance index	World Development Indicators
ODA×RQ	ODA×regulatory quality	Interaction between ln_oda and RQ	World Development Indicators
RL	Rule of law	Governance index	World Development Indicators
ODA×RL	ODA×rule of law	Interaction between ln_oda and RL	World Development Indicators
VA	Voice and accountability	Governance index	World Development Indicators
ODA×VA	ODA×voice and accountability	Interaction between ln_oda and VA	World Development Indicators

Note: GDP, Gross Domestic Product; COC, Control of Corruption; GE, Government Effectiveness; PS, Political Stability; RQ, Regulatory Quality; RL, Rule of Law; VA, Voice and Accountability.

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Original Article

Achievements of the Intermediate Course of the Ghana Field Epidemiology and Laboratory Training Program Supported by the Korea International Cooperation Agency's Global Health Security Agenda Phase I Project

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Abstract

We highlight the successful implementation outcomes of the Field Epidemiology and Laboratory Training Program (FELTP) intermediate-level course conducted in Ghana in 2022 as part of the Global Health Security Agenda (GHSA) Phase I project funded by the Korea International Cooperation Agency (KOICA). The FETP-Intermediate training aims to strengthen regional epidemiologic capacity. Data reviews and interviews were conducted to evaluate the training outcomes at levels one to four of the Kirkpatrick evaluation model. Descriptive, analytical, quantitative, and thematic qualitative analyses were conducted. Of the 40 trainees enrolled, 38 (95%) successfully graduated, and 35 of them (88%) participated in the evaluation. The study revealed statistically significant differences between participants' pre- and post-training abilities in the competency areas of epidemiologic methods, outbreak investigation and response, teaching and mentorship, surveillance, and communication ($p<0.001$). Almost half the participants cited knowledge transfer to colleagues and subordinates as their workplace contributions, and 29% (10/34) mentioned a lack of logistics for field activities as

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a major barrier to skill application. In 2022, 38 outbreaks were detected, of which 36 (97%) were investigated. With support from KOICA, the Ghana FETP-Intermediate course successfully trained two cohorts in 2021.

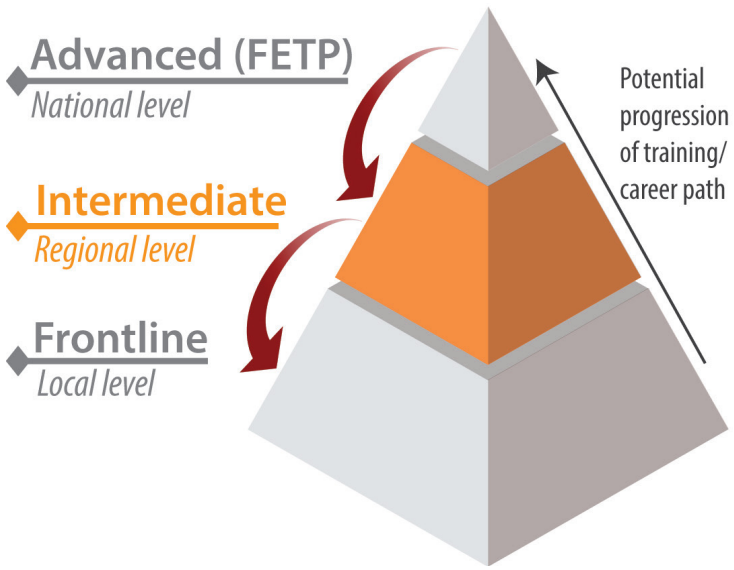
Key Words: Korea International Cooperation Agency (KOICA), Ghana, Field Epidemiology and Laboratory Training Program (FELTP), Global Health Security Agenda (GHSA), Kirkpatrick

Ⅰ. INTRODUCTION

1. Field Epidemiology Training Program-Training Approach

To address the need for enhancing the capacity of the public health workforce across all levels of the public health system—from district to regional to national—a three-tiered training model was developed by the United States Centers for Disease Control and Prevention (US CDC) (〈Figure 1〉). This model encompasses the Frontline, Intermediate, and Advanced levels. The Field Epidemiology Training Program (FETP) is a service-oriented training initiative aimed at educating public health workers at every level of the public health system in the principles and practices of field epidemiology while they serve their countries. FETPs are designed to minimize classroom time and maximize field experience for trainees. The FETP curriculum is globally standardized, allowing countries to adapt it to their specific contexts. As trainees provide public health services, they acquire essential skills to collect, analyze, and utilize data to prioritize health issues and inform policy decisions.

〈Figure 1〉 Three tiers of FETP training model



Source: CDC. (n.d.).
Note: FETP, Field Epidemiology Training Program.

The FETP Advanced, Intermediate, and Frontline address the skills needed by health officials at the national, sub-national (province, state, or regional), and district (frontline) levels, respectively, of the Ministry of Health (MOH) to improve epidemiologic capacity to evaluate and strengthen public health surveillance systems, investigate and control outbreaks, and conduct field studies to address public health priority issues.

2. Workforce and Field Epidemiology Training Program-Training in Ghana

Ghana's decentralized health system, structured across 16 regions and 261 districts, faces significant human resource disparities, with the majority of specialized health professionals concentrated in urban areas, particularly Accra and Kumasi (Alhassan et al., 2016).

Field epidemiologists are trained through the Ghana Field Epidemiology and Laboratory Training Programme (GFELTP) at the School of Public Health, University of Ghana. The need for continuous professional development through in-service workforce capacity improvement programs that are aimed at enhancing knowledge and skills of public healthcare workers led to the development of the GFELTP in 2007. The GFELTP was structured as a collaboration between the MOH/Ghana Health Service, the University of Ghana School of Public Health and the African Field Epidemiology Network and was supported by partners such as the U.S. CDC in direct response to the need for more specialized public health skills in country (Bandoh et al., 2019). Politically, the establishment of the GFELTP is reinforced by the Public Health Act, 2012 (Act 851) which emphasizes the need for more integrated public health approach including disease surveillance and outbreak response (Government of Ghana, 2012).

Through the GFELTP, training is conducted for epidemiologists at the three-tiered levels. There are variations in the level of training and skills among regional and district level healthcare professionals. This created a gap for increased trained public health staff at the regional and district levels to improve the implementation of International Health Regulations (IHR) through improved surveillance capacity and outbreak detection and response across disciplines of study.

3. Need for Official Development Assistance, Prioritization of Workforce and Intermediate Field Epidemiology Training Program

In 2018, Korea International Cooperation Agency (KOICA) signed an Memorandum of Understanding (MOU) with the US CDC to support Phase I of the Global Health Security Agenda (GHSA) project. The GHSA Phase I project aimed to support the Government of Ghana toward achievement of the IHR 2005 core capacities, through collaborative funding and technical support from the KOICA (Ghanaian Times, 2024). Ghana identified a number of milestones and activities that are congruent with moving the country towards meeting its commitment to the IHR.

One of the key milestones was to assemble a skilled workforce including physicians, veterinarians, biostatisticians, laboratory scientists, and at least one trained field epidemiologist per 200,000 population, who can systematically cooperate to meet relevant IHR and Performance of Veterinary Services (PVS) core competencies. The training of field Epidemiologists was prioritized as one of the key activities. As the Advanced and Frontline FETP's levels were already well established in the country, priority was given to the Intermediate level. Additionally, prioritizing intermediate-level training enabled reaching regional-level staff that could continue working on the job, enabling complementary partnerships and the use of domestic resources during field projects.

4. Description of Field Epidemiology Training Program-Intermediate Training Approach in Ghana

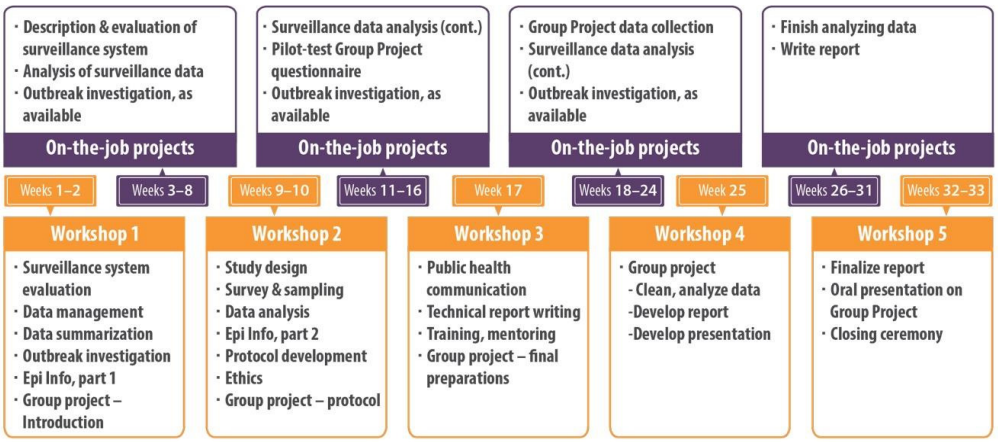
The GFELTP introduced the FETP-Intermediate programme in Ghana in January 2019 (Kenu et al., 2020). The objectives of the training programme are to improve the skills of sub-national public health workers in data collection, analysis, interpretation, and communication, increase collection and use of public health data for decision-making, improve the quality and use of surveillance data at the sub-national levels of the health system, strengthen capacity to respond to outbreaks and other public health threats and increase the pool of mentors for FETP-Frontline (Ameme et al., 2016; Kenu et al., 2020).

In Ghana, a standard training for one cohort lasts 35-40 weeks and comprising 7-8 weeks of classroom session and up to 33 weeks of field work. Classroom instruction focused on epidemiologic practice rather than theory and used an interactive problem-solving approach, with frequent exercises and case studies to reinforce lecture material. It addressed surveillance interpretation and analysis, outbreak investigation, study design, planning and conducting a survey, data entry and analysis in Epi Info (Epi Info™, version 7.1.5. CDC, Atlanta, GA, USA), public health communication, and training and mentorship. Field placements focused on investigations, projects, and other activities under the mentorship of experienced epidemiologists that supported the mission and priorities of the Ghana FELTP (〈Figure 2〉).

5. Global Health Security Agenda Phase I Official Development Assistance Support for Implementation of Field Epidemiology Training Program-Intermediate in Ghana

From 2018 to 2022, the KOICA through the Government of Korea's ODA support provided a total funding envelope of $7,200,000.00 for implementation of GHSA Phase I across three of the GHSA action packages (Ghanaian Times, 2021). GHSA

〈Figure 2〉 Structure of FETP-Intermediate in Ghana used for Training Cohorts III and IV, 2021



Source: CDC. (n.d.).
Note: FETP, Field Epidemiology Training Program.

Phase I support from KOICA led to demonstrable improvements in laboratory (accreditation for labs, introduction of novel technologies); emergency management and response (establishment of a public health emergency operations centre [PHEOCs]) as well as workforce development (Ghanaian Times, 2024).

With 29% of the total GHSA phase I funding envelope ($2,115,000) dedicated to health workforce development, five cohorts of field epidemiologists were trained by the GFELTP using the global FETP-Intermediate training curriculum. As of January 2025, the Ghana FELTP programme has trained eight cohorts, including 136 health professionals from the GHS, Veterinary Services Division, Environmental Health Services Division and Food and Drugs Authority (FDA) across the 16 regions of the country, mainly with support from KOICA. These cohorts were trained from 2019 to 2024, with two cohorts trained concurrently.

To document the outcomes of the successful implementation of the GHSA Phase I training, we highlight achievements of implementation of the FETP-Intermediate capacity building training for the two cohorts trained in 2022.

Ⅱ. METHODS

1. Evaluation Approach

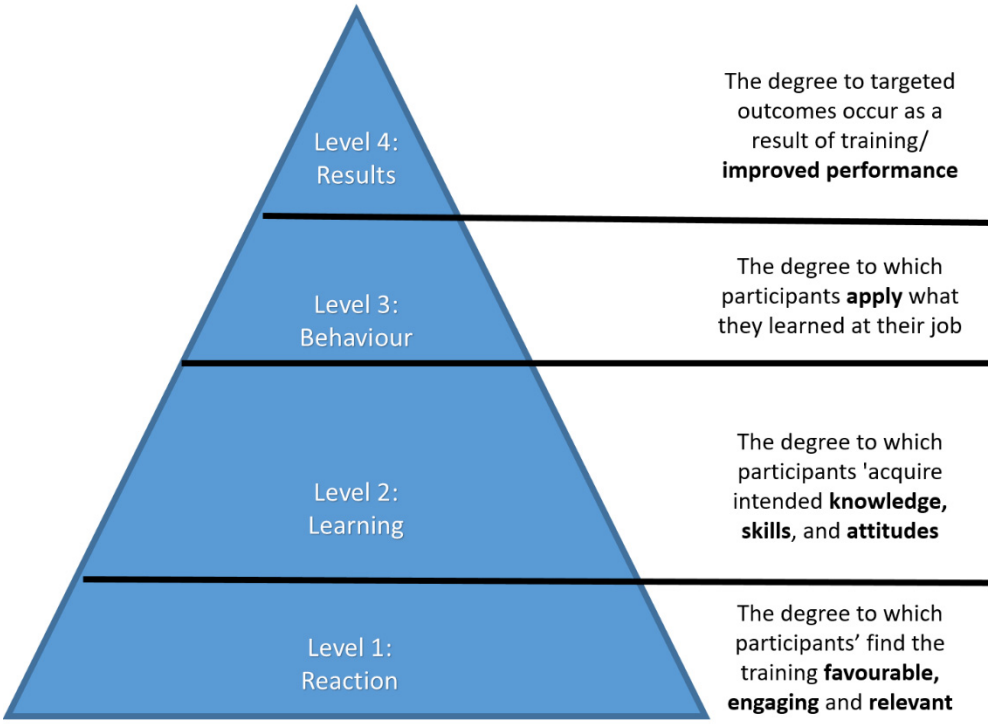
This was a pre-post evaluation with multiple data sources. All registered cohort III and IV trainees were followed from the period of training in 2021 to the evaluation data collection in March 2023, 15 months post-training. Data on participation in outbreaks and other activities collected during the evaluation was limited to the first six months post training in 2022. The data review and interviews evaluated the outcomes of the training at levels one to four of the Kirkpatrick model (reaction, learning, behavior and results) using original self-designed questionnaires (Falletta, 1998; Ho et al., 2016). The questionnaire was reviewed by monitoring and evaluation experts and determined to be fit for purpose. Descriptive and analytic quantitative approaches were used for participant appraisal of the training content, pre- and post- training skill assessment, pre- and post- training test scores, and performance of key epidemiologic activities post training. In-depth interviews and document review were used to explore graduates' experiences regarding application of competencies including local response to outbreaks.

1) Kirkpatrick evaluation framework

The Kirkpatrick model for evaluating training programmes was adopted for assessing the FETP-Intermediate programme. Developed in 1959 by Donald Kirkpatrick, the model is a well-recognized standard and the most widely used approach for evaluating the effectiveness of training programmes (Bates, 2004). It has proven suitable in training evaluations across a wide range of disciplines 5-10. The model provides a logical and comprehensive framework to evaluate the effectiveness of training at four levels: reaction (level 1), learning (level 2), behaviour (level 3) and results (level 4) (〈Figure 3〉) (Bates, 2004).

Level 1 (reaction) focuses on trainees' perceptions of the training programme, assessing the extent to which they found it favorable, engaging, and relevant to their jobs. A positive reaction implies trainees' satisfaction with the training, which in turn increases the likelihood that trainees would learn and use the skills and knowledge acquired4. Level 2 (learning) measures the degree to which participants acquired the intended knowledge and skills as a result of their participation

〈Figure 3〉 Kirkpatrick model for evaluating training programmes

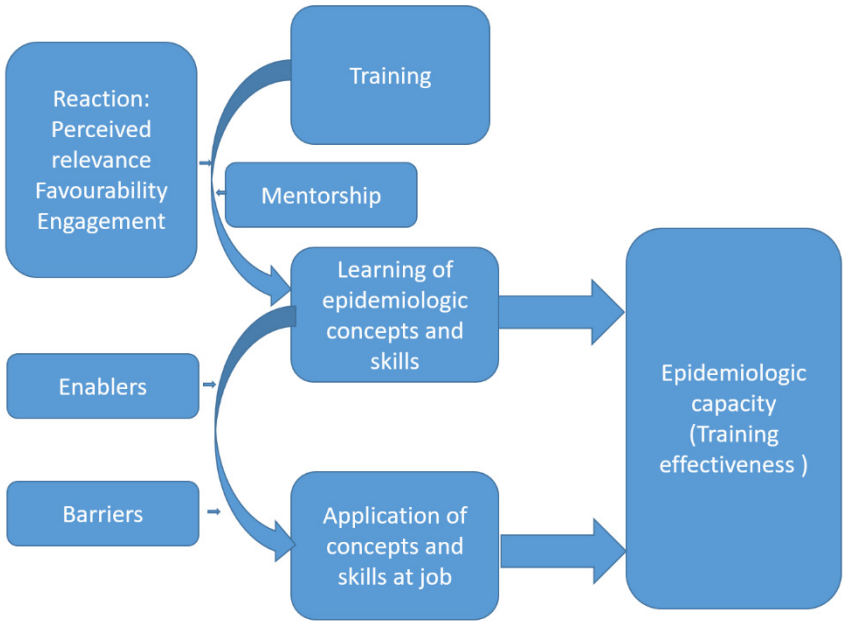


in the training, and is said to have occurred if the knowledge or skills have improved from their pre-training level 4. Level 3 (behaviour) assesses the degree to which trainees apply what they learned when they returned to their job. Level 4 (results) measures the degree to which the targeted outcomes occur as a result of the training. It measures changes in key performance indicators 4.

2) Evaluation conceptual framework

The conceptual framework (〈Figure 4〉) was developed based on the Kirkpatrick model and the goals of the FETP-Intermediate. Training effectiveness, in alignment with the programme goals and objectives, was defined as improved epidemiologic capacity of participants post training evident by the following: (1) learning of key epidemiologic concepts (2) acquisition or improvement of skills needed to carry out epidemiologic activities and (3) application of concepts and skills at the workplace. It was theorized that the training would lead to learning if the participants had a positive reaction towards the course content. On the contrary, if the participants expressed negative reactions, they would not be motivated to learn. Mentorship, a key component of all FETP training models, was included in the framework because of its anticipated positive effect on learning, especially skills

〈Figure 4〉 Conceptual framework



acquisition. Conditions that influence the transfer of learning to application at the workplace include the willingness of trainees to transfer learning to the workplace and the work environment, that is, work-related conditions that provide (enablers) or limit (barriers) opportunities for skill utilization.

3) Evaluation scope

This evaluation focused on two of the eight cohorts of FETP-Intermediate graduates of the Ghana FELTP as of November 2025. The selection of these two cohorts was based solely on the availability of follow up and planned evaluation data for these two cohorts. Due to financial constraints, not all graduated cohorts were followed up for a planned evaluation. However, the standard global FETP-Intermediate curriculum adapted for the Ghana was utilized for the training of all eight completed cohorts with no key differences in the competencies gained by trainees. Therefore, findings from these two cohorts evaluated is deemed useful for measurement of the outcomes of the training.

2. Data Collection

Records of all residents of cohort III (20) and cohort IV (20) were reviewed, and they were all contacted via email and via phone call for their participation.

An electronic questionnaire on competency self-assessment and appraisal of the training was emailed to all invited participants. All graduates in Ghana at the time of evaluation were visited at their workplaces for further assessment (〈Table 1〉).

1) Reaction (level 1)

Satisfaction and engagement indicators of the participants' reactions were evaluated using a questionnaire composed of six items, each with a 5-point Likert scale (5: strongly agree, 4: agree, 3: neutral, 2: disagree, 1: strongly disagree). Data was also collected on participants' perception of relevance of the different modules to their job using a 5-point Likert scale (5: critically relevant - a key developmental objective, 4: very relevant, 3: average or moderate relevance, 2: minimal relevance, 1: no relevance) (〈Table 1〉). The reaction was thus assessed for the course overall and for each module.

〈Table 1〉 Summary of assessment methods

Kirkpatrick level	Mode of assessment	Mode of verification	Measurement timing	Administration and abstraction
Level 1: Reaction	• Structured questionnaire with 5-point Likert scale to assess perceived relevance, favorability/satisfaction, engagement and mentor support	Test scores during training	During training (March to December 2022)	Data provided in excel by GFELTP secretariat and verified by evaluator
Level 2: Learning of key epi-demiologic concepts	• Comparison of pre- and post-test score averages • Paired t-test to determine statistically significant changes in test scores at 95% confidence intervals	Questionnaires administered during training (moodle platform)	During training (March to December 2022)	Data provided in excel by GFELTP secretariat and verified by evaluator
Level 2: Learning of skill	• Structured questionnaire on self-reported differences in capacity in key areas in field epidemiology pre- and post-training; capacity rated using 5-point Likert scale	Outbreak reports Surveillance summary reports Research proposal/data analysis plan Written or published abstract/manuscript Training agenda or pictures	During evaluation (2023)	Administered by evaluator. Verified by GFELTP Secretariat
Level 3: Behaviour (application at job)	• Semi-structured questionnaire on participant engagement in key areas of field epidemiology within the period after graduation • Open ended questions to explore impact on team projects • Feedback from supervisor on changes in performance	Not applicable (self report)	During evaluation (2023)	
Level 3: Behaviour (barriers and enablers)	• Open ended questions to explore factors that enabled or limited skill utilization at the workplace and suggestions for improvement • Categorized into themes	Field investigation reports Not applicable (self report)	During evaluation (2023)	Administered by evaluator. Verified by GFELTP Secretariat
Level 4: Result (training outcomes)	• Semi-structured questionnaire on the timelines for outbreak detection, notification and response prior to, and following the training	Not applicable (self report)	During evaluation (2023)	Administered by evaluator. Verified by GFELTP Secretariat

Note: GFELTP, Ghana Field Epidemiology and Laboratory Training Programme.

2) Learning (level 2)

Learning was assessed using differences in pre- and post-test scores, as well as a structured questionnaire on self-reported changes in skills. Pre- and post-tests were administered to the trainees during their workshop training sessions. The questions administered to trainees at the beginning of each workshop covered the modules covered within that workshop and were repeated at the end of the workshop to measure their knowledge gain. The questions were developed as part of the standard FETP-Training package and scored by the facilitators. These scores were obtained from the GFELTP secretariat.

Participants were asked to rate their skills and capacity in key areas of field epidemiology, prior to, and following completion of the programme. The questions covered all the competencies of the programme, based on the course curriculum and included epidemiologic methods, outbreak investigation, surveillance, communication, teaching and mentorship, and use of information, communication and technology. For each question on their skill/ability, they were requested to select a response on a Likert scale (5: outstanding - definitely one of your strengths, 4: above average, 3: average or moderate, 2: minimal ability, 1: no experience or training in this area) (〈Table 1〉).

3) Behaviour (level 3)

Behaviour was evaluated using semi-structured questions on engagement in key areas of field epidemiology during the period following graduation. Participants were requested to provide documents to verify their engagement in outbreak investigations, surveillance summaries, research, teaching practices, and scientific and nonscientific communication (〈Table 1〉).

Immediate supervisors who could assess the participants before and after the training were also interviewed to collect information on graduates' performance. In this regard, only supervisors who had worked with the participants pre- and post-training were eligible for interviews (〈Table 1〉).

Open-ended questions were used to explore participants' perceptions of the factors that enabled or limited skill utilization in the workplace and opportunities for improvement (〈Table 1〉).

4) Results (level 4)

Data to assess training outcomes were obtained from interviews with senior health officials. Using data from both primary (interviews with senior health officials) and secondary (from outbreak reports) sources, the length of time between outbreak detection and notification and between notification and response was determined for local outbreaks occurring in 2020 (pre-training period) and 2022 (post-training period). This assessment was conducted for each region and for the different agencies, that is, GHS, FDA, Veterinary Services Department (VSD), and Environmental Health Service Department (EHSD), in which the graduates work.

3. Statistical Analysis

STATA (StataCorp, version 16.0, College Station, TX, USA) and Microsoft Excel 2013 were used for quantitative data analysis. Background data were summarized using means, medians, frequencies, and proportions, as appropriate. Satisfaction, engagement, and relevance indicators related to reactions were presented as frequencies and proportions. To assess learning, pre- and post-test scores for all graduates were compared using a paired t-test with 0.05 as the level of significance. Comparison was further stratified by the agency of graduate. Skill learning was analyzed by computing the pre- and post-median ratings for each assessed competency. The median values ranged from 1 (lowest) to five (highest). Wilcoxon signed rank test was used to assess significant differences between rated pre- and post-training skills.

Regarding Behaviors, quantitative indicators related to skill application were summarized using frequencies and proportions of graduates partaking in assessed competency. Wilcoxon rank-sum test was used to test the relationship between self-ranking of skills and skill application at the workplace.

4. Ethical Consideration

The evaluation was part of in-service training under the Public Health Act, 2012 (Act 851), so approval from an ethical review board was not necessary. However, permission was obtained from the GHS, FDA, VSD, and Environmental Health Services Department before data collection commenced (sample permission letter

as a supporting material). Verbal consent was sought from graduates prior to their enrollment in the evaluation, and confidentiality of the evaluation data was assured. All collected data was de-identified during the report writing process.

Ⅲ. RESULTS

1. Training Context, Characteristics of participants and Training Outcomes

FETP-Intermediate cohorts III and IV trainings were conducted concurrently from January 2021 to December 2021 following the standard approach for FETP-Intermediate training in Ghana. Participants were recruited from the GHS-17, FDA-8, VSD-8, and EHSD-7. Of the 40 residents enrolled using the One Health approach, thirty-eight produced all required outputs, including surveillance system Evaluation, Surveillance Data Analysis, Mentorship, Teaching, abstracts, and group projects, with an overall graduation rate of 95% (38/40) (〈Table 2〉).

〈Table 2〉 Characteristics of trainees and training outcomes, FETP-intermediate cohorts 3 and 4, 2021

Variable	Cohort 3	Cohort 4	Total
Sex			
Male	18	17	35 (87.5)
Female	2	3	5 (12.5)
Institution			
Ghana Health Service	8	9	17 (42.5)
Food and Drugs Authority	4	4	8 (0.2)
Environmental Health and Sanitation Department	4	3	7 (17.5)
Veterinary Services Division	4	4	8 (0.2)
Region			
Ashanti	10		10 (25.0)
North East	3		3 (7.5)
Northern	3		3 (7.5)
Savannah	3		3 (7.5)
Eastern		5	5 (12.5)
Greater Accra		5	5 (12.5)
Oti		5	5 (12.5)
Volta		5	5 (12.5)

〈Table 2〉 Continued

Variable	Cohort 3	Cohort 4	Total
Intermediate outputs produced			
Surveillance system evaluation (SSE)	20	20	40 (100)
Surveillance data analysis (SDA)	18	20	38 (95.0)
Abstract SSE	18	20	38 (95.0)
Abstract SDA	18	20	38 (95.0)
Outbreak report	18	20	38 (95.0)
Executive summary	18	20	38 (95.0)
Teaching report	18	20	38 (95.0)
Mentorship report	18	20	38 (95.0)
Group projects	18	20	38 (95.0)
Graduated from program			
Yes	18	20	38 (95.0)
No	2	0	2 (5.0)

Note: FETP, Field Epidemiology Training Program.

Thirty-five graduates 88% (35/38) participated in the evaluation; 49% (17/35) were from cohort 3 and 51% (18/35) were from cohort 4. The majority (86%, 30/35) were male, with a mean age of 32 (±5) years. Of the 34 participants in Ghana, one had joined a different agency (United States Agency for International Development [USAID]) and 29% (11/34) had different job titles. Eight of the 11 with different job titles had been promoted to a senior role, with four (GHS-2, EHSD-1, VSD-1) attributing their promotion to their participation in the intermediate FETP (〈Table 3〉).

2. Level 1: Reaction to the Training Course

All respondents were satisfied with the course overall, and 97% (34/35) found it engaging. The majority of respondents were satisfied with the various modules and found them engaging (〈Table 4〉).

3. Level 2: Learning of Key Epidemiologic Concepts

The pre-training and post-training test scores averaged 66% and 81%, respectively, with a statistically significant percentage increase of 15%. Participants from the VSD group had the greatest increase in their test scores (〈Table 5〉).

〈Table 3〉 Characteristics of evaluation respondents

Attribute	Frequency (n=35)	Proportion (%)
Sex		
Male	30	86
Female	5	14
Highest educational level		
Postgraduate	24	69
Undergraduate	10	29
Diploma	1	3
Agency		
Ghana Health Service	16	46
Food And Drugs Authority	8	23
Environmental Health Service Department	8	23
Veterinary Services Department	3	9
Years of work experience		
〈5 years	5	14
≥5 to 〈10 years	4	11
≥10 to 〈15 years	18	51
≥15 years	8	23
Work station post training		
Same region	33	94
Different region	0	0
Resigned	2	6
Attended training with similar modules		
Yes	14	40
No	21	60

〈Table 4〉 Participants' reaction to the FETP intermediate course

Variables	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Somewhat agree (%)	Strongly agree (%)
I was satisfied with course overall	0	0	0	5 (14)	30 (86)
I was satisfied with the module on outbreak investigation	0	0	0	7 (20)	28 (80)

〈Table 4〉 Continued

Variables	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Somewhat agree (%)	Strongly agree (%)
I was satisfied with the module on epidemiological methods	0	0	0	13 (37)	22 (63)
I was satisfied with the module on communication	0	0	1 (3)	11 (31)	23 (66)
I was satisfied with the module on surveillance	0	0	0	7 (20)	28 (80)
I was satisfied with the module on training and mentoring	0	0	2 (6)	10 (29)	23 (66)
I was satisfied with mentor support	0	0	1 (3)	5 (14)	29 (83)
The course, overall was engaging	1 (3)	0	1 (3)	4 (11)	29 (83)
The module on outbreak investigation was engaging	0	0	1 (3)	4 (11)	30 (86)
The module on epidemiologic methods was engaging	0	0	1 (3)	10 (29)	24 (69)
The module on communication was engaging	0	0	1 (3)	13 (37)	21 (60)
The module on surveillance was engaging	0	0	1 (3)	7 (20)	27 (77)
The module on training and mentorship was engaging	0	0	1 (3)	10 (29)	24 (69)

Note: FETP, Field Epidemiology Training Program.

〈Table 5〉 Comparison of pre- and post- test scores

Variables	Pre-test average[1)]	Post-test average[1)]	Difference (%)	p-value
All participants	65.6	80.9	+15	〈0.001
Ghana Health Service	69.7	80.4	+10	〈0.001
Food and Drugs Authority	66.8	82.3	+16	〈0.001
Veterinary Services Division	63.9	84.9	+21	〈0.001
Environmental Health Services Division	58.6	76.2	+18	〈0.001

Note: 1) Average scores of all participants who took the test during training.
2) Paired T-test.
3) Learning of key epidemiologic skills.

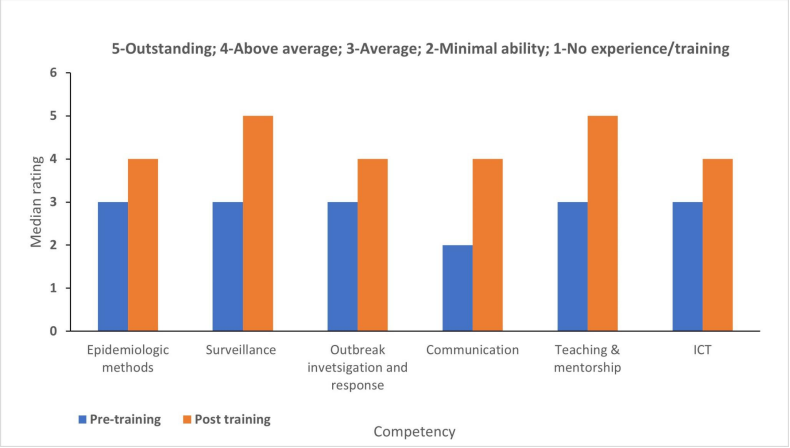
All 35 respondents reported an increase in their ability to conduct key field epidemiology activities as a result of the training they received. At least 50% of respondents rated their pre-training ability in epidemiological methods, outbreak investigation and response, teaching and mentorship surveillance, and use of Information & Communication Technology (ICT) tools? as 'average ability'. The least rated pre-training ability was communication, with a median of 'minimal ability' (〈Figure 5〉). Post-training competencies in surveillance, and training and mentorship were rated 'outstanding' by about 60% (21/35) and 51% (18/35) of respondents respectively. The other competencies had median post-training ability rating of 'above average' (〈Figure 5〉).

There were statistically significant differences between the pre-training and post-training abilities in all the competency areas: epidemiologic methods (z score=5.2, p-value〈0.001), outbreak investigation and response (z score=5.2, p-value〈0.001), teaching and mentorship (z score=5.1, p-value〈0.001), surveillance (z score=5.1, p-value〈0.001), use of ICT (z score=5.1, p-value〈0.001), and communication (z score=5.2, p-value〈0.001).

4. Level 3: Application of Concepts and Skills at Work Place (Behavior)

About 44% (15/34) reported at least one outbreak in their area from January to

〈Figure 5〉 Self-reported rating of competencies



Note: ICT, Information & Communication Technology.

June, 2022; 38% (13/34) of respondents participated in the investigation and response of these outbreaks. Outbreaks investigated included avian and human influenza outbreaks, yellow fever outbreaks, circulating vaccine-derived polio outbreaks, Marburg viral disease outbreaks, and food-borne illnesses (〈Table 6〉). One respondent was involved in a follow up investigation of consumer complaint. Fifty percent (17/34) of participants had prepared surveillance summary reports, 82% (28/34) had prepared PowerPoint presentations or abstracts, and 29% (10/34) had been involved in a research proposal writing or data analysis. About 67% (23/33) mentored other public health professionals; none was involved in GFELTP mentorship programmes. Seventy-four percent (25/34) had been involved in facilitating teaching or training sessions. Half (17/34) were part of rapid response teams (〈Table 6〉).

〈Table 6〉 Engagement in key activities in field epidemiology

Variables	Frequency (%)			Comments
	GHS n=16 (%)	Non-GHS n=18 (%)	Total n=34 (%)	
Reported at least one outbreak in their region	10 (63)	5 (28)	15 (44)	• Avian influenza • Yellow fever • Chicken pox • Acute diarrhoeal illness • Measles • Unusual death among students • Human influenza • Food borne outbreak • Rabies • Marburg • Monkey pox • Circulating vaccine derived polio
Participated in at least one outbreak investigation and response	8 (50)	5 (23)	13 (38)	• Avian influenza • Yellow fever • Chicken pox • Acute diarrhoeal illness • Measles • Unusual death among students • Human influenza • Food borne outbreak • Rabies • Marburg • Monkey pox • Circulating vaccine derived polio

〈Table 6〉 Continued

Variables	Frequency (%)			Comments
	GHS n=16 (%)	Non-GHS n=18 (%)	Total n=34 (%)	
Prepared surveillance summary report	10 (63)	7 (39)	17 (50)	
Prepared scientific / non-scientific PowerPoint presentation or abstract / executive summary or policy brief	15 (94)	13 (72)	28 (82)	
Prepared study protocol or data analysis plan or report	7 (44)	3 (17)	10 (29)	
Mentored at least one public health professional	14 (88)	9 (50)	23 (67)	
Involved as a mentor in any FETP training	0	0	0	
Facilitated a teaching session	14 (88)	11 (61)	25 (73)	
Member of the district or regional rapid response team (RRT)	12 (75)	5 (28)	17 (50)	14 were members of RRT before training

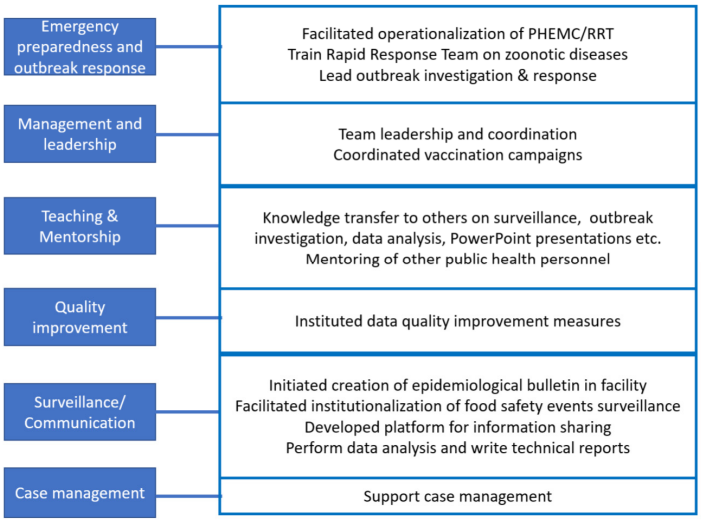
Note: GHS, Ghana Health Service; FETP, Field Epidemiology Training Program.

Almost half of participants cited knowledge transfer to colleagues and subordinates as their contribution at their workplace. One graduate facilitated the operationalization and launch of the Public Health Emergency Management Committee (PHEMC), while another facilitated the development of an operational center for food safety response in his unit. Others cited mentorship and the provision of support for data analysis and technical report writing as means of contributing to work teams (〈Figure 6〉).

5. Level 3: Enablers and Barriers to Skill Application (Behavior)

Supervisor support (50%, 17/34) was the most cited promoter of skill application or transfer at the workplace. About 29% (10/34) mentioned lack of logistics for field activities as a major barrier to skills application (〈Table 7〉).

〈Figure 6〉 Participants' contribution to work teams



〈Table 7〉 Cited enablers and barriers to skill application at work place

Variables	Number (n=34)	Proportion (%)
Enablers		
Support from supervisor	17	50
Available logistics	6	18
Job requirement	9	24
Management support	7	21
Available infrastructure	1	3
Self-motivation	2	6
Promotion	1	3
Mentorship support	1	3
Barriers		
Lack of logistics	10	29
Time constraints	4	12
Lack of management support	5	15
Lack of institutional support	2	6
Not required of job	5	15
No opportunities for application	1	3
Not mastered some skills	1	3
Poor interagency collaboration	1	3

6. Level 4: Training Short Term Impact (7-1-7) (Results)

A retrospective review of outbreaks in assessed regions for the period 2020 (pre training) and 2022 (post training) showed that more outbreaks were investigated by teams that included at least one graduate in 2022. In 2020, 23 outbreaks were detected out of which 43% (10/23) were investigated. In 2022, 38 outbreaks were detected with almost all investigated 97% (36/38). The median time from outbreak onset to detection was 2 days (range: 1-30 days) for outbreaks occurring in 2020, and 1 day (range: 1-30 days) for those occurring in 2022. One outbreak each in 2020 and 2021 was detected after seven days of onset. A delay in laboratory confirmation was reported as the reason for late detection. Notifications were sent for all outbreaks within a day of detection. For outbreaks that were investigated, the median time from notification to response was 1 day in both 2020 (range: 1-3) and 2022 (range: 1-4) (〈Table 8〉).

Ⅳ. DISCUSSION

This evaluation of two cohorts of the FETP-Intermediate training in Ghana using ODA support from KOICA under phase I of the GHSA support project demonstrates significant achievements in building epidemiologic capacity at the subnational level in Ghana. All four levels of the Kirkpatrick evaluation framework showed gains, including trainee satisfaction with the training programme, knowl-

〈Table 8〉 Timeliness intervals for outbreaks

Variables	Median (range)		Comments
	2020	2022	
Time between outbreak onset and detection	1 day (1–30)	1 day (1–30)	1 outbreak detected after 7 days in 2020 and 2022
Time between outbreak detection and notification	1 day	1 day	All outbreaks notified within a day
Time between outbreak notification and mounting response	1 day (1–3)	1 day (1–4)	Response mounted within 7 days for all outbreaks

Note: 1) Outbreak counts and timeliness metrics may reflect multiple concurrent systems and are not attributable to the GFELTP Intermediate training alone.
2) GFELTP, Ghana Field Epidemiology and Laboratory Training Programme.

edge acquisition, behavioral application of competencies gained, and some short-term organizational impact.

Through the training of these two cohorts, Over thirty-five additional epidemiologists have graduated. The distribution of graduates across multiple regions including underserved regions from the Northern zone of the country - Northern, North East and Savannah addresses the geographic inequity in the distribution of specialized health professionals in Ghana (Alhassan et al., 2016). This aligns with Ghana's commitment to achieving Universal health coverage through strengthened primary health care systems (Ghana Health Service, 2019). The success of these two cohorts and the FETP-Intermediate training directly contributed to the continuation of ODA funding for Phase II of the GHSA project. With a total funding envelope of $ 10,850,000.00 for Ghana, the University of Ghana, School of Public Health, would train an additional four cohorts of the FETP-Intermediate and FETP-Frontline, conduct leadership and management training for Health Directors, and mentorship training for alumni of the Ghana FELTP. GHSA Phase II is being implemented from 2023 to 2027, building directly on the successes of the first phase of implementation (Ghanaian Times, 2024).

For the first and second levels of the Kirkpatrick evaluation model, findings were positive. The evaluation revealed high trainee satisfaction with the training modalities, with mean satisfaction scores exceeding 4.0 on a 5-point scale for the first level of the Kirkpatrick model. The positive reception is critical to sustained trainee engagement and motivation, especially since the FETP-Intermediate is an in-service training requiring time commitment in addition to maintaining full-time employment responsibilities. Pre-Post knowledge gains (level 2) across all core competency areas—epidemiology, surveillance, outbreak investigation, biostatistics, communication, and ICT—demonstrated effective curriculum delivery and learning retention. The use of standardized pre- and post-training assessments provided objective evidence of skill acquisition, a methodological strength that enhances the credibility of evaluation findings (Bates, 2004). The FETP training utilizes a learning by doing approach that steers away from traditional classroom-based training that may not produce immediate service delivery (Jones et al., 2017). Positive evidence from FETP-Frontline implementations in resource- constrained settings including Liberia and Ethiopia concur that investment in intermediate-level FETP training, when sustained and institutionalized, can yield

long-term dividends in surveillance system performance (Amo-Addae et al., 2021; Kebebew et al., 2022).

Our evaluation documented Behaviour change (level 3). Graduates reported applying the skills and competencies learned in their workplace in outbreak investigations, system evaluations, data analysis, and communication. Field supervisors also affirmed that graduates demonstrated improved technical competence and problem-solving skills. This is an encouraging finding demonstrating that the FETP-Intermediate training leads to field application - a key aspect of workforce development (Brownson et al., 2018). However, the extent and sustainability of behavioral application are heavily dependent on organizational support structures, including supervision, mentorship, and enabling work environments. Previous literature on FETP effectiveness consistently emphasizes that post-training mentorship and supportive supervision are essential for translating acquired skills into sustained practice improvements. Evaluations of the Kenya FETP and the Dr. LJW Fellowship program in Low- and Middle-Income Countries, training improved knowledge gain however systemic coordination gaps that cannot be addressed by training alone affected sustainability in workplace practice (Brownson et al., 2018; Kebebew et al., 2022). Cited barriers to skill application at the workplace including provision of logistics, organizational support, structured follow up, strengthened supervisory support at the sub-national level need to be addressed to ensure sustainability of behavior change gains.

The evaluation revealed gaps in measuring longer-term, population-level health outcomes attributable to the training program (level 4). While process indicators including number of investigations and number of reports produced were well-documented, outcome indicators such as reduced outbreak detection duration, case fatality rates, or reduction in disease incidence were not systematically tracked. This limitation is common in FETP evaluations globally and reflects the methodological challenges of attributing population health improvements to specific training interventions amid multiple confounding factors (Frieden, 2014). Future evaluations should consider adopting mixed methods approaches that combine quantitative metrics with qualitative case studies to capture the full spectrum of program impact (Creswell & Plano Clark, 2011).

Overall, KOICA's support for the FETP-Intermediate training under the GFELTP represents an important example of South-South cooperation and the positive role

of emerging donors in global health security. The successes of phase I (2018-2023) and continuation of Phase II (2023-2027) provide an opportunity to consolidate gains made. The evaluation demonstrates that when ODA investments are embedded within national institutions and aligned with government policies (e.g., the Public Health Act 2012, National Health Policy), they are more likely to produce sustainable capacity gains. For longer term success and sustainability, KOICA's ODA allocation should include sustainability plans, transition milestones and Government financing commitments to ensure continuity beyond the GHSA project timelines (Edwards, 2015).

V. LIMITATIONS

The scores from the pre-post assessments conducted during the training sessions used the same pre-test questions during the posttest assessment. This is prone to memory effect, practice effect and strategic responding where participants focus on what they know they will be tested because they have committed the pre-test questions to memory. To mitigate these effects, questions used were mostly application level. Additionally, answers were not provided to pre-test questions, the order of the post-test questions was rearranged, and additional questions were included during the 6-month post-training evaluation data collection. Future cohorts should consider the use of Item response theory approaches to generate comparable but non-identical assessments. Self-reported changes in competencies by trainees and supervisors were used to estimate the effect of the training on learning. This mode of measurement is subjective; therefore, it is likely that respondents may have underestimated or overestimated their pre- or post-training competencies. The evaluation did not account for the influence of other trainings with similar modules that respondents attended either before or after the FETP-Intermediate training. To counter this participants' responses were validated by collecting same information from relevant documents to reduce recall bias. Future evaluations could include comparison groups of similar health professionals in the same settings as graduates to allow for more rigorous inference and attribution to the FETP-Intermediate training. Although the number of outbreaks detected and managed during the period preceding, and following the training were presented in this evaluation, there is no intention to exclusively attribute the increment to the Intermediate FETP training.

Ⅵ. CONCLUSION

With support from KOICA, the two cohorts of FETP-Intermediate training conducted in 2021 were successfully completed with excellent graduation rate. The Intermediate FETP achieved its goal of strengthening the epidemiologic capacity of training participants. The training contents were rated favorably by the participants who also found the modules relevant to their job. The training increased the knowledge of graduates on key epidemiologic concepts as well as their capacity to engage in public health activities related to field epidemiology.

Ⅶ. RECOMMENDATIONS

The GFELTP should consider using small-group simulations to assess participants' abilities in surveillance, outbreak investigation, epidemiological methods, ICT, communication, and teaching at the start and end of the training to permit a more objective assessment of changes in competency levels. Pre- and post-assessments for newer cohorts should consider the memory and practice effects and consider changing the questions for post-assessment. Evaluations conducted for newer cohorts should consider a more structured way to measure Level 4 (results) using the Kirkpatrick model.

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『국제개발협력』 운영지침

국제개발협력지 운영지침

제정 2019.10.16. 지침 제289호
개정 2021.04.12. 지침 제350호
개정 2023.03.15. 지침 제474호
개정 2024.05.24. 지침 제528호
개정 2025.09.29. 지침 제591호

제1장 총칙

제1조(목적)

이 지침은 한국국제협력단이「간행물 발간 및 활용에 관한 지침」제2조에 따라, 국제개발협력 분야의 연구 활성화 및 정책적·실무적 아이디어 개발에 기여하고자 발간하는「국제개발협력」학술지의 발간 및 활용에 관한 사항을 정함을 그 목적으로 한다.

제2조(적용 범위)

「국제개발협력」학술지(이하"국제개발협력"이라 한다) 발간에 관하여는 법령 또는 다른 규정에서 특별히 정한 것을 제외하고는 이 지침이 정하는 바에 따른다.

제3조(용어의 정의)

이 지침에서 사용하는 용어의 정의는 다음 각 호와 같다.

1. "국제개발협력(Journal of International Development Cooperation)"이란 한국국제협력단(이하 "협력단"이라 한다)이 발간하는 연구 학술지를 의미한다.〈개정 2025.09.29.〉
2. "저자"는 "주저자"와 "공동저자"로 구분한다. "주저자"(first author)는 논문 저자 명단 중 가장 먼저 오는 자로 논문을 주도적으로 작성한 자를 의미한다. "공동저자"(co-author)는 "주저자"를 제외한 나머지 저자들을 말한다.

제2장 연구윤리

제4조(연구윤리자가진단서)

① “국제개발협력”에 연구논문을 게재하기 위해서는 별지 제1호 서식 ‘연구윤리자가진단서 및 저작권 이양 동의서(이하 “연구윤리자가진단서”)’를 제출하여야 한다.‘연구윤리자가진단서’를 제출하지 않을 경우 제출된 원고는 심사 대상에서 제외된다.

② 논문의 위조, 변조, 표절, 부당한 논문저자 표시 행위 등 부정행위를 사전에 방지하기 위해 논문유사도를 포함한 표절검사 프로그램을 이용한 검사결과를 ‘연구윤리자가진단서’에 작성하여야 한다.

제5조(연구자의 정직성)

① 연구자는 자신이 수행하는 연구를 정직하게 수행하여야 한다. 이 경우 정직은 연구의 구상, 설계, 자료수집, 연구비 지원, 연구 참여자들에 대한 공정한 보상, 연구 성과의 출판 등 연구과정 전반에 관한 정직을 말한다.

② 연구자는 타인의 저작물의 인용에 관한 일반원칙을 준수하여야 한다.

③ 연구자는 타인의 저작물의 내용을 표절하지 않아야 한다.

④ 연구자는 다른 지면에 게재한 논문을 중복 게재하지 않아야 한다.

제6조(연구윤리위원회)

① 연구윤리에 관한 제반 사항을 심의·의결하기 위해 연구윤리위원회를 설치한다.

② 연구윤리위원회는 편집위원장 포함하여 7인 내외로 구성하며, 편집위원장 및 편집위원은 연구윤리위원을 겸임한다.

③ 연구윤리위원회는 이 지침 제2장 연구윤리에 관한 규정 개정 또는 폐지에 관한 사항을 심의·의결한다.

④ 연구윤리위원회는 “국제개발협력”과 관련된 논문의 연구 윤리 사항, 연구 정직성 및 연구 부정행위에 대한 조사를 실시한다.

⑤ 연구윤리위원장은 기타 연구윤리와 관련된 제반 사항을 심의 요청할 수 있다.

⑥ 연구윤리위원회 회의는 재적위원 과반수 출석과 출석위원 과반수의 찬성으로 의결하며, 위원장은 표결권을 가지고 가부동수인 경우에는 결정권을 가진다. 사안에 따라서는 서면으로 심의·의결할 수 있다.

제7조(심사위원의 공정성)

① 논문의 심사를 의뢰받은 심사위원은 지정된 기간 안에 성실하게 심사하고 그 결과를 편집위원회에 통보하여야 한다.

② 논문심사의 공정성을 보장하기 위하여, 심사과정 및 심사결과의 통지 과정

에서 투고자 및 심사위원은 익명으로 처리한다.
③ 심사위원은 저자의 인격과 독립성을 존중하여야 한다. 심사 결과서에는 논문에 대한 자신의 판단을 밝히되, 수정이나 보완이 필요하다고 생각되는 부분에 대해서는 그 이유도 함께 설명하여야 한다.
④ 심사위원은 논문심사를 위해 필요한 경우가 아니라면 심사를 의뢰받은 논문에 관련된 사항에 대해 비밀을 지켜야 한다.

제8조(표절)
① 게재(신청) 논문이 다음 각 호에 해당할 경우 표절로 간주한다.
1. 학술지, 단행본, 학회발표논문집, 전자저널 등 학술매체를 통해 기 출간된 타인 및 자신의 연구저술의 전부 또는 일부를 무단으로 게재한 경우
2. 기 출간된 타인의 연구저술의 연구 설계, 타인의 1차 자료, 기타 지적 재산과 관련된 항목을 사용하면서 그 출처를 적절한 방식으로 명시하지 않은 경우
3. 기 출간된 타인 또는 자신의 연구저술의 일부를 인용하면서 인용부호, 각주, 내용주 또는 기타의 적절한 방식을 통해 그것을 명시하지 않은 경우
4. 별지 제1호 양식에 따라 논문 표절률이 20% 이상인 경우
② 표절 여부에 대한 판정은 다음 각 호의 사항을 따른다.
1. 편집위원회는 표절 여부의 판정 권한을 가지며, 심사위원의 검토, 독자의 제보 또는 자체 판단에 따라 표절 여부를 검토하고 판정한다.
2. 표절 여부의 1차 검토는 해당 논문의 심사위원 2인이 수행하도록 한다.
3. 편집위원회는 심사위원 2인의 1차 검토결과를 바탕으로 표절 여부를 검토·판단하고 표절 의혹이 있을 경우 그 사실을 해당 논문의 저자에게 통보하고 소명하도록 한다.
4. 표절 의혹에 대한 저자의 소명이 없을 경우 편집위원회는 해당 논문을 표절로 판정한다.
5. 표절 의혹에 대한 저자의 반론이 있을 경우 편집위원회는 편집위원의 과반수 참석 및 참석자의 3분의 2 이상의 찬성으로 표절 여부를 판정한다.
③ 표절 사실이 인정된 경우 다음 각 호와 같이 제재한다.
1. 편집위원회에 의해 표절 판정을 받은 논문의 저자는 판정 후 4년간 단독 또는 공동으로 “국제개발협력”에 논문게재를 신청할 수 없다. 그 경우 편집위원회는 표절 논문의 저자에게 그 사실 및 정확한 게재신청 불가기간을 공식 통보한다.
2. 게재 이후 표절 판정을 받은 논문은 “국제개발협력” 논문목록에서 공식 삭제된다.
3. 편집위원회는 본 조에 따른 업무가 종료된 후 표절 판정 및 제재조치와 관

련된 세부사항을 한국연구재단에 통보한다.

제9조(논문의 중복게재)

① 게재(신청) 논문이 다음 각 호의 어느 하나에 해당될 경우 중복게재로 간주한다.

1. 타 학술지에 게재를 신청하여 심사가 진행 중인 논문의 경우
2. 이미 출판된 연구물 또는 게재예정인 논문인 경우

② 중복게재 여부에 대한 판정은 다음의 절차를 따르며, 중복게재 사실이 인정된 경우 다음의 제재를 부과한다.

1. 중복게재 신청 여부의 심사는 제보 또는 편집위원회의 자체판단에 따라 이루어지며 편집위원회가 판정을 내린다.
2. 제1항에 해당하는 논문은 “국제개발협력”에 게재 신청할 수 없다.
3. 중복게재 신청된 것으로 판정된 논문은 즉시 심사에서 제외되며 저자는 단독 및 공동으로 향후 3년간 “국제개발협력”에 논문게재를 신청할 수 없다.
4. 편집위원회는 중복게재 신청자에게 그 사실 및 정확한 게재신청 불가기간을 공식 통보한다.

③ “국제개발협력”에 게재한 논문을 재출간할 경우 원 출처를 반드시 밝혀야 한다.

제3장 편집위원회

제10조(편집위원회 구성)

① 편집위원회의 구성과 편집위원(장)의 임기는 다음 각 호와 같다.

1. 편집위원회는 편집위원장, 편집위원, 편집간사로 구성하며, 편집위원회 구성은 10인 내외로 한다.
2. 편집위원(장)은 내외부에서 추천한 자로서 협력단 연구 업무 소관 이사의 최종 승인을 받아 위촉한다.
3. 편집위원(장)의 임기는 원칙적으로 2년으로 하되, 1년 단위로 연임할 수 있다.
4. 편집위원회 구성 시 국제개발협력에 대한 학문적 수월성과 분야 전문성을 보유하고, 협력단의 정책 및 사업 운영 방향 등에 대한 이해도가 높다고 판단되며, 향응·뇌물수수 등 부패행위 및 징계사항 등의 전력이 없는 자를 위원으로 위촉해야 한다.
5. 편집간사는 학술지 발간 부서 내 1인이 되며, 위원회의 학술지 발간 관련 제반 업무를 수행한다.

② 편집위원장의 직무는 다음의 호를 따른다.

1. 편집위원장은 편집위원회를 대표하고, 의장으로서 위원회를 소집하며, 편집위원회의 운영을 총괄한다.
2. 편집위원장이 부득이한 사유로 직무를 수행할 수 없을 때에는 협력단 연구업무 소관 부서장 혹은 편집위원장이 지정하는 편집위원이 그 직무를 대행할 수 있다.

제11조(편집위원회 역할)

① 편집위원회는 "국제개발협력"에 게재되는 논문의 심사, 편집 및 출판과 관련하여 다음의 항목들을 심의할 수 있다.
1. 편집위원회 운영에 관한 규정 개정 및 폐지에 관한 사항
2. "국제개발협력" 발간에 관한 규정 개정 및 폐지에 관한 사항
3. 투고 논문의 심사 및 게재에 관한 사항
4. "국제개발협력"의 편집 및 출판에 관한 사항
5. 그 밖에"국제개발협력" 운영에 관한 중요사항

② 동 지침에서 규정한 사항 이외에 「국제개발협력」 학술지의 발간 및 활용에 관한 기타 세부사항은 편집위원회의 의결로 결정할 수 있다.

제12조(편집위원의 성실성)

① 논문 게재 및 편집에 관한 사항을 심의하기 위해 편집위원회를 설치한다.

② 편집위원은 투고된 논문의 게재와 관련된 모든 책임을 지며, 저자의 인격과 학자로서의 독립성을 존중하여야 한다.

③ 편집위원은 투고된 논문에 대해 그 저자와 무관하게 오직 논문의 질적 수준과 투고에 관한 규정에 근거하여 공정하게 취급하여야 한다.

④ 편집위원은 투고된 논문의 심사를 전문지식과 공정한 판단 능력을 지닌 심사위원에게 의뢰하여야 한다. 동일 논문에 대한 심사 결과가 심사위원 간에 현저하게 차이가 날 경우 해당분야 제3의 전문가에게 심사를 추가로 요청할 수 있다.

⑤ 편집위원은 투고된 논문의 게재 여부가 결정될 때까지는 논문의 내용이나 저자와 관련된 사항에 대해 비밀을 유지하여야 한다.

⑥ 편집위원(장)이 다음 각 호의 어느 하나에 해당하는 경우에는 협력단 연구업무 소관 이사의 승인을 받아 해당 편집위원(장)을 해촉할 수 있다.
1. 편집위원(장)의 직무수행의 성실성이 저해되는 경우
2. 심신장애로 인하여 편집위원(장)의 직무를 수행할 수 없게된 경우
3. 직무와 관련된 비위사실이 있는 경우

4. 직무태만, 품위손상 및 그 밖의 사유로 인하여 편집위원(장)으로 적합하지 아니하다고 인정되는 경우

제13조(편집위원회 운영)

① 편집위원회는 제11조의 임무 수행을 위하거나, 기타 필요한 경우 편집위원장이 소집한다. 단, 협력단의 필요에 따라 연구소관부서는 회의를 별도로 소집할 수 있다.

② 편집위원회 회의는 재적위원 과반수 출석과 출석위원 과반수의 찬성으로 의결하며, 위원장은 표결권을 가지고 가부동수인 경우에는 결정권을 가진다. 사안에 따라서는 서면으로 심의·의결할 수 있다.

③ 편집위원회 회의 개최 시, 회의에 참석하는 외부 편집위원(장)에게는“예산집행 매뉴얼”내 ‘외부인력 참석 및 행사업무’ 중 ‘위원회 및 설명(보고)회 업무’에 따라 회의 참석 수당을 지급할 수 있다. 〈개정 2025.09.29.〉

제4장 발행규정

제14조(발행처)

“국제개발협력”의 발행처는 협력단으로 한다.

제15조(발행횟수 및 발행형태)

① “국제개발협력” 발간 횟수는 1년에 2회 발행을 원칙으로 하며, 필요한 경우 편집위원회의 결정에 따라 발간 횟수를 증감하거나 특별호를 발간할 수 있다. 학술지 발행일자 및 원고 마감일은 다음 각 호와 같다.

1. “국제개발협력”은 매년 6월 30일과 11월 30일 자로 발행한다.
2. 원고 마감일은 별도로 정하지 않으며, 특별한 경우 외에는 편집위원회의 결정에 따른다.

② 학술지는 저널 형태의 인쇄본으로 출판되며, 원문은 국제개발협력저널 홈페이지(ejidc.org) 또는 협력단 ODA 도서관을 통해 무상 제공된다.

제16조(논문의 투고, 심사, 게재 확정일의 표기) 소정의 심사 절차에 의해 게재가 확정된 논문에 대해서는 심사 절차의 투명성을 제고하기 위해 당해 논문의 접수일, 심사일자, 게재확정일자 등 심사단계를 논문 내에 표기한다.

제17조 [본조삭제 2024.05.24.]

제18조(발행인 및 편집처) 발행인은 협력단 이사장으로 하며, 편집처는 “국제개발협력” 편집위원회로 한다.

제19조(저자 투고료 및 심사수당)

① 저자는 논문 투고 시 별도의 심사료 및 게재료를 납부하지 않는다.

② 협력단은 게재가 확정된 논문에 한해서 「조사연구사업규정」에 따라 원고료를 지급할 수 있다. 원고료는 논문 1편당 지급하며, 저자가 2인 이상인 경우에는 주저자에게 지급한다.

③ 협력단은 논문의 심사 진행 시 심사자에게 별지 제 6호 심사료 지급기준에 따라 심사료를 지급할 수 있다.

제20조(발행 부수 및 별쇄본) 발행 부수는 관련 예산에 따라 신축적으로 결정하며 저자에게 제공할 수 있다.

제5장 편집규정

제21조(논문구성) 본지에 투고하기 위하여 다음의 논문 작성방법을 준수해야 하며 이에 어긋날 경우 논문접수를 보류할 수 있다.

① 한글 원고는 ‘한글’프로그램을 사용하며, 영문 원고는 ‘MS Word’를 사용하여 작성한다.

② 논문의 본문 분량은 A4용지 20매 내외이며, 논문 구성은 다음과 같은 순서를 갖추어야 한다.

1. 논문게재신청서
2. 본문 및 각주
3. 참고문헌 및 부록

③ 연구비 수령 표기 및 논문 사사 표기는 각주로 기재한다. 협력단이 지원하는 일체의 학위과정을 이수 중인 자는 연구비를 수령한 것으로 간주한다.

④ 공동집필인 경우에는 주저자와 공동저자를 명기하여 제출하여야 한다. 저자는 제1저자를 제일 처음 명기하며, 공동저자는 논문 기여도를 고려하여 명기한다.

⑤ 한글 논문은 국·영문 초록을, 영문 논문은 영문 초록을 함께 제출해야 한다.

⑥ 국·영문 초록은 원고의 내용을 포괄적으로 담고 있어야 하며 내용을 이해하

기 쉽고 간결하게 작성하고 길이는 언어별로 A4용지 1매를 넘지 않도록 한다.

제22조(원고체계) 원고의 편집체계는 다음과 같다.

① 한글 원고의 편집체계는 다음과 같다.

1. 글씨체: KoPub바탕체
2. 본문 글자크기 12p, 각주 글자크기 10p,
3. 표와 그림 글씨체: KoPub돋움체, 제목 글자크기: 12p 내용 및 출처 글자크기: 11.5p
4. 줄간격 170%, 상하여백 15, 좌우여백 25, 머리말 및 꼬리말 15

② 영문 원고의 편집체계는 다음과 같다.

1. 글씨체: KoPub바탕체
2. 본문 글자크기 12-point font

③ 본문 서술의 순서는 "Ⅰ.", "1.", "1)", "(1)" 순차로 매긴다.

④ 표나 그림 제목은 "〈표 1〉 …"과 같은 형식으로 표나 그림의 위에 적는다. 표나 그림에 대한 주는 개별주(a), b), c)의 기호사용; 확률주인 경우에는 *p〈.05, **p〈.01, ***p〈.001), 일반주('주:'로 표시하고 기재)의 순으로 자료출처의 윗부분에 달아준다. 표나 그림의 출처('출처:')라고 쓴 후에 제시한다. 표나 그림의 주석 순서는 개별주, 일반주, 출처의 순서로 제시한다.

제23조(인용 표시)

① 인용을 할 경우, 저자명, 간행연도를 반드시 명기하며, 인용 페이지는 선택적으로 표기할 수 있다.

② 구체적인 예는 아래와 같다.

가. 저자명은 서술의 흐름에 따라 본문에 노출시킬 수도 있고, 괄호 속에 넣어야 할 경우도 있다.
[예1] "…이상백(2009)…"; [예2] "…라 했다(이상백, 2009: 23)."

나. 외국인 저자명을 본문에 노출시킬 경우, 원어로 표기한다. 또한 외국인 저자명을 본문에 노출시키지 않을 경우, 번역서와 원서에 관계없이 저자명은 원어로 표기한다.
[예] "…Mills(2011: 66)는 …"

다. 2인 공동저술일 경우, 두 저자명을 중간점으로 구분하고 병기한다.
[예] "…(이상백·김채윤, 2006: 25), …(Lee & Xang, 1999)"

라. 3인 이상의 공동저술일 경우 "외"(et, al.)를 사용한다.
[예] "…(문승규 외, 2014: 16), … (Romeo et al., 2010) "
마. 출간예정인 저술은 "출간예정"(forthcoming)을, 미간행물은 "미간행"(unpublished)을 명기한다.
[예] "…(김일철, 2017 출간예정)"; "…(Lee, forthcoming)"
바. 다수의 논문을 인용할 경우에는 가나다 순으로 정렬하고, 연도 순으로 정렬한다.
[예] "…(홍길동, 2016; 김철수, 1999; Johnson et al., 2010)"

제24조(참고문헌)

① 참고문헌의 나열은 본문에 인용 또는 언급된 것만으로 제한한다. 먼저 한국어 문헌을 저자명의 가나다 순으로 제시하고, 이어서 동양어 문헌을, 마지막으로 서양어 문헌을 알파벳 순으로 제시한다. 단, 중국어 및 일본어 저자명은 괄호 속에 영문 또는 한글 표기를 한다.

② 참고문헌은 아래의 예시를 따르며, 구체적으로 명기되지 않은 형식은 APA 양식에 준하여 작성한다.

가. 동일 저자의 저술을 두 편 이상 제시할 때는 출판연도 순으로 나열한다.
나. 동일 저자의 저술로서 같은 연도에 출간된 것이 두 편 이상일 때는 제목의 가나다 또는 알파벳순으로 나열하되, 연도표기 뒤에 a, b, c, …를 부기하여 구별하도록 한다.
다. 저자가 2인 이상일 때는 모든 저자의 이름을 기재해야 한다. 영문저자의 성을 제외한 이름은 앞글자 약어를 사용한다.
[예] “Cannel, C. F., Miller, P., & Oksenberg, L. (1981).…”
라. 국문 참고문헌의 저자명이 기관명으로 되어 있을 경우 국문표기를 원칙으로 한다.
[예] 한국국제협력단. *2015 KOICA 대외무상원조실적 통계*. 성남: 한국국제협력단.
마. 정확한 연도를 알 수 없을 때에는, n.d.(not determined)를 사용한다.
바. 참고문헌 기재의 구체적인 예는 아래와 같다.

(1) 서적
• Author, A. A. (year). *Title of work* (xx ed., Vol. xx).

Location: Publisher.

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제6장 논문기고 및 심사에 관한 규정

제25조(논문 기고의 요건)

① "국제개발협력"은 공적개발원조(ODA) 관련 이슈 및 국제개발협력과 관련한 모든 제반 문제에 대한 이론과 정책대안 모색에 관한 연구논문을 대상으로 하며 논문의 성격 및 형태는 순수이론적인 논문, 실증분석논문, 사례연구, 응용연구 및 정책분석 등 방법론상의 제약을 두지 않는다.

② 투고된 논문은 다른 학술지에 게재된 바 없는 독창적인 내용이어야 하며, 투고 시점에 다른 학술지에서 심사 중이 아니어야 한다.

③ 학술대회 등에서 발표된 논문, 타 학술지(연구보고서, 대학논총 등 포함), 학위 논문 등의 경우에는 그대로는 투고할 수 없으며, 축약본 또는 수정 보완한 형태로 투고 가능하되 반드시 그 사실을 명기해야 한다.

④ 협력단에서 운영하는 사업 및 조사 일체의 과정에서 획득한 자료를 바탕으로 논문을 작성하여 투고하는 경우에도 반드시 그 사실을 명기해야 한다.

⑤ 사사 표기와 관련한 예는 다음과 같다.

1. 연구비 지원에 의하여 수행된 논문 등 논문 특이사항은 그 내용을 국문 제목에 각주로 표기한다.
2. 학위 논문 및 연구보고서를 기초로 축약, 수정·보완하여 투고하는 경우, 그 출처를 반드시 표기한다. 예시1) 학위 논문의 경우: 본 논문은 홍길동(2016)의 OO학위 논문 "OOO"의 일부를 수정·보완한 것임. 예시2) 보고서의 경우: 본 논문은 '홍길동. 2016. OOO. 발행도시: 발행기관'의 내용을 기초로 작성되었음.
3. 참여한 협력단 사업 및 조사와 관련한 연구일 경우: 본 논문은 (기간, 연도) 동안 한국국제협력단(KOICA)이 추진한 "사업/활동명"의 현장자료를 활용한 연구임 (no.한국국제협력단 해당 사업/활동 계약번호)

⑥ 투고된 논문은 분석결과를 바탕으로 한 국제개발협력과 관련된 실무 및 정책에 적용할 수 있는 연구 시사점을 반드시 포함해야 한다.

제26조(논문의 접수)

① 논문은 온라인 투고시스템을 통해 각 권 1호의 경우 발행전 연도 12월 1일부터 해당 연도 4월 30일까지, 2호의 경우 해당 연도 7월 1일부터 9월 30일까지 제출하는 것을 권고한다. 〈개정 2025.09.29.〉

② 논문을 제출할 때에는 본문 외에도 논문게재신청서, 연구윤리자가진단서 및 저작권 이양동의서, 개인정보 수집·이용 동의서를 함께 제출해야 한다.

③ 편집위원장은 투고된 논문이 제25조에 어긋나거나 학술지의 성격에 배제된다고 판단될 경우 논문을 접수하지 않을 수 있다.

제27조(논문 심사위원)

① 심사위원은 편집위원회의 추천에 의거하여 편집위원장이 해당분야의 전문가 2인을 배정하며, 저자와 동일한 기관 근무자는 배제한다.

② 심사기한은 투고한 날로부터 최대 30일까지로 한다. 30일 이내 심사가 완료되지 않을 경우, 그 심사자를 편집위원 중 한 사람으로 교체할 수 있다.

③ 편집위원은 자신이 투고한 원고의 심사위원 추천과정에 참여할 수 없다.
④ 특별기고 원고의 경우에는 논문심사를 생략할 수 있다.
⑤ 제4항의 경우와 같이 논문 심사를 생략할 시, 편집간사 및 연구 소관부서장은 원고료를 지급받는 자가 「공직자의 이해충돌방지법」제2조제6호 '사적이해관계자'에 해당할 경우, 제5조의 절차에 따라 이를 신고 및 회피 신청해야 한다.
⑥ 상기 조항에 위배되지 않고 제7조제2항에 따라 심사과정 및 심사결과의 통지과정에서 심사위원과 투고자의 익명성과 논문심사의 공정성이 보장되는 경우에 한하여, 편집위원(장)은 심사위원으로 참여할 수 있다.

제28조(판정기준)

① 심사는 별지 제4호 국제개발협력지 심사결과서 양식에 따라 실시한다.
② 심사 판정기준은 초심에서 accepted, minor revision, major revision, reject의 네 단계로 구분한다. 심사 횟수는 초심을 포함하여 2회로 한정하며, 2회 연속'수정 후 재심'판정을 받은 경우에는'게재불가'로 결정한다.
③ 심사 결과에 근거한 판정 기준은 다음과 같다.

심사자 1	심사자 2	판정결과
accepted	accepted	그대로 게재
accepted	minor revision	수정 후 게재
minor revision	minor revision	
accepted	major revision	수정 후 재심
accepted	reject	
minor revision	major revision	
major revision	major revision	
reject	minor revision	
reject	major revision	
reject	reject	게재불가

④ '그대로 게재'는 수정 없이 게재할 수 있다.
⑤ '수정 후 게재'는 편집위원회가 정한 기한 내에 수정된 원고를 제출하여야 하며, 심사위원은 해당 원고의 수정 여부를 검토하고 편집위원회가 최종 확인한다. 〈개정 2025.09.29.〉
⑥ '수정 후 재심'은 편집위원회가 정한 기한 내에 수정된 원고를 제출하여야 하며, 심사위원은 해당 원고를 재심사하여 게재 여부를 결정한다.

⑦ ‘게재불가’로 판정된 원고는 동일한 제목과 내용으로 “국제개발협력”에 재투고 될 수 없다. 〈개정 2025.09.29.〉

제29조(수정논문 제출기한 및 게재 확정)

① 편집간사는 게재 여부를 포함한 최종 심사결과를 그 이유와 함께 논문 제출자에게 통보한다.

② 게재확정 통보를 받으면 저자는 편집 제반규정에 따라 교정 후 최종 논문 파일을 제출한다.

③ 게재가 확정된 논문이라도 분량이나 구성 등 편집방침에 따라 다음 호로 이월하여 게재할 수 있다.

④ 수정된 논문의 제출기한은 심사결과 통보일로부터 최대 1개월로 하고 주저자의 서면요구에 의하여 1개월 범위 내에서 기간을 연장할 수 있으며, 특별한 사유없이 제출기한을 초과하는 경우에는 투고를 자진 철회하는 것으로 간주한다. 〈개정 2025.09.29.〉

⑤ 주저자는 수정논문 제출기한 연장이 필요한 경우, 심사결과 통보일로부터 1개월 이내에 별지 제5호 국제개발협력지 수정논문 제출기한 연장 신청서 양식을 작성하여 편집간사에게 제출하여야 한다. 〈개정 2025.09.29.〉

제29조의2 (심사결과 이의 제기)

① 심사 결과에 이의가 있는 저자는 심사결과 통지일로부터 5일 이내에 이메일로 이의신청 사유서를 제출하여 재심사를 청구할 수 있다.

② 전항의 청구가 있는 경우, 편집위원장은 임시 편집위원회를 소집하여 청구가 있는 심사 논문의 원문과 심사의견, 청구이유를 종합적으로 검토한 후 다음 각호의 어느 하나에 해당하는 결정을 하여야 한다.

1. 청구 기각 : 청구이유의 타당성이 인정되지 않아 직권으로 기각
2. 원 심사위원에게 재심사 회부 : 청구이유의 타당성이 일부 인정되는 경우 원 심사위원에게 재심사 의뢰
3. 재심사 : 청구이유의 타당성이 전반적으로 인정되는 경우 새롭게 심사위원 2인을 배정하여 재심사 실시

③ 저자는 전항 제2호 및 제3호 재심사 결과에 따른 게재불가 결정에 불복하여 다시 다툴 수 없다.

제30조(저작권) ① 협력단은 최종심사에 통과한 논문의 무상사용권한을 갖는다.

② 논문 투고시 별지 제1호 서식의 ‘저작권 이양 동의서’를 작성하여 제출하여야 한다. ‘저작권 이양동의서’를 제출하지 않을 경우, 제출된 원고는 심사 대상에서 제외된다.

제31조(개인정보 관리)

① 협력단은 논문 투고 및 심사, 게재를 비롯한 편집위원회 운영 등 국제개발협력지 발간 및 운영업무 전반에 걸쳐 필요한 논문 투고자, 심사위원, 편집위원(장) 등의 개인정보를 활용할 수 있으며, 필요한 경우 관련 정부부처 및 민간기관에 제공할 수 있다.

② 개인정보 활용에 대한 세부기준은 관련법령 및 협력단 개인정보 보호지침에 따른다.

부칙 〈2019.10.16.〉

제1조(시행일) 이 지침은 2019년 10월 16일부터 시행한다.

부칙 〈2021.04.12.〉

제1조(시행일) 이 규정은 2021년 4월 12일부터 시행한다.

부칙 〈2023.03.15.〉

제1조(시행일) 이 규정은 2023년 3월 15일부터 시행한다.

부칙 〈2024.05.24.〉

제1조(시행일) 이 규정은 2024년 5월 24일부터 시행한다.

부칙 〈2025.09.29.〉

제1조(시행일) 이 지침은 2025년 9월 29일부터 시행한다.

[별지 제1호 서식] 연구윤리 준수 서약서 및 저작권 이양 동의서

연구윤리 준수 서약서 및 저작권 이양 동의서

소속 :

성명 : (인)

상기 본인은 '*(논문제목)* ' 연구를 수행함에 있어 연구의 객관성과 신뢰성, 연구결과의 공익성과 진실성을 확보하기 위하여 아래와 같이 연구 윤리를 준수하였음을 확인합니다.

첫째, 연구과정에서 객관적인 자세를 가지고 철저한 기록을 통해 연구결과의 검증이 가능하도록 노력한다.

둘째, 연구결과에 중대한 영향을 미칠 수 있는 데이터 및 분석 결과를 왜곡 또는 조작하지 않으며 결과발표는 진실되고 공정하게 한다.

셋째, 유사 중복된 연구를 지양하며 연구자원을 투명하고 효율적으로 사용하도록 노력한다.

넷째, 타인의 연구개발 과정과 결과를 존중하며, 위조, 변조, 표절 등 지적 재산을 도용하는 부정행위를 하지 않는다. 이를 위해 본인은 연구 최종 결과에 대한 표절 부정행위를 방지하기 위해 표절검사 및 유사성 검사를 사전에 실시한다.

표절 검사 활용 프로그램명	
표절 검사 기준	*예. 6어절 이상 일치,* *1문장 이상 일치 등*
최종 표절률 (20% 이내 인정)	

다섯째, 본 논문이 '국제개발협력'에 게재될 경우, 저작재산권(복제권, 공연권, 공중송신권, 전시권, 배포권, 대여권, 2차적저작물작성권) 전부를 한국국제협력단에 이양하기로 동의한다.

저 자	성 명	소속 및 직위	수신 이메일	전화 번호	서 명
제 1 저 자				연락처 1 : 연락처 2 :	
공동저자1				연락처 1 : 연락처 2 :	
공동저자2				연락처 1 : 연락처 2 :	
교 신 저 자				연락처 1 : 연락처 2 :	

년 월 일

한국국제협력단 이사장 귀중

[별지 제1-2호 서식] 연구윤리 준수 서약서 및 저작권 이양 동의서 (영문)
〈개정 2025.09.29.〉

JIDC
Research Ethics and Copyright Transfer Agreement

Title of Manuscript:_____

I hereby certify that I agreed to submit the manuscript entitled as above to the Journal of International Development Cooperation with the following statements:

• This manuscript is original and there is no copyright problem, defamation and privacy intrusion. Any legal or ethical damage should not be directed to the Journal of International Development Cooperation due to this manuscript.

• All authors contributed to this manuscript actually and intellectually and have responsibility equally to this manuscript.

• This manuscript was not published or considered for publication to any other academic journals in the world. It will not be submitted again to other journals without permission from the Journal of International Development Cooperation if it is accepted for publication.

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And I declare that I have abided by the following Code of Research Ethics while writing this paper.

• First, I have strived to be honest in my conduct, to undertake valid and reliable research conforming with the guidance of ethical regulations for the Journal of International Development Cooperation, and I affirm that my paper contains honest, fair and reasonable conclusions based on my own careful research under the guidance of ethical regulations for the Journal of International Development Cooperation.

• Second, I have not committed any acts that may discredit or damage the credibility of my research. These include, but are not limited to: falsification, distortion of research findings or plagiarism and false authorship.

Date : YYYY/MM/DD

Name of the First Author / Signature: _____

Name of the Co-author1/ Signature: _____

Name of the Co-author2/ Signature: _____

Completed and signed Research Ethics and Copyright Transfer Agreement must be submitted with manuscript.

[별지 제2호 서식] 논문게재신청서

논문게재신청서

<table>
<tr><td>논문제목(국문)</td><td colspan="4"></td></tr>
<tr><td>논문제목(영문)</td><td colspan="4"></td></tr>
<tr><td rowspan="6">주저자</td><td>성명</td><td>(국문)</td><td colspan="2">(영문)</td></tr>
<tr><td>소속</td><td></td><td>직위</td><td></td></tr>
<tr><td>주소</td><td colspan="3"></td></tr>
<tr><td>전화</td><td></td><td>팩스</td><td></td></tr>
<tr><td>이메일</td><td colspan="3"></td></tr>
<tr><td>저자
약력</td><td colspan="3"></td></tr>
<tr><td rowspan="6">공동저자</td><td>성명</td><td>(국문)</td><td colspan="2">(영문)</td></tr>
<tr><td>소속</td><td></td><td>직위</td><td></td></tr>
<tr><td>주소</td><td colspan="3"></td></tr>
<tr><td>전화</td><td></td><td>팩스</td><td></td></tr>
<tr><td>이메일</td><td colspan="3"></td></tr>
<tr><td>저자
약력</td><td colspan="3"></td></tr>
<tr><td>목차</td><td colspan="4"></td></tr>
<tr><td>국문요약</td><td colspan="4"></td></tr>
<tr><td>국문키워드</td><td colspan="4"></td></tr>
<tr><td>영문요약</td><td colspan="4"></td></tr>
<tr><td>영문키워드</td><td colspan="4"></td></tr>
<tr><td>기타</td><td colspan="4">아래 중 하나에 해당하는 경우 해당사항 서술
1) 타 연구비를 수령하여 진행한 연구의 경우,
2) 학술대회 등에서 발표된 논문, 타 학술지, 학위논문등의 축약본</td></tr>
</table>

	또는 수정보완한 형태의 논문인 경우 *3) 협력단에서 운영하는 사업 및 조사 일체의 과정에서 획득한 자료를 바탕으로 논문을 작성한 경우* *4) 협력단이 지원하는 학위과정을 이수 중인 자가 투고한 경우*

* 논문요약은 국문 기준 700자 내외, 영문기준 300단어(words)로 제한하며, 3~5개의 국문 및 영문 주제어(Key words) 제시

[별지 제2-2호 서식] 논문게재신청서 (영문) 〈개정 2025.09.29.〉

JIDC Title Page
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Title (English)				
First Author	Name	(Korean)	(English)	
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Table of Contents				
Summary of manuscript (English) (less than 200 words)				
Research Keyword (English) (3-5 words)				
Others	*If applicable to any of the following, pelase describe:* *1) Papers produced under other research grants,* *2) Abbreviated or revised version of papers presented at academic conferences, other journals, dissertation*			

	before, *3) Papers based on materials acquired in the course of KOICA projects and research,* *4) Papers submitted by individuals currently underatking a KOICA-supported degree program (as part of the Fellowship Program (CIAT)).*

[별지 제3호 서식] 개인정보 수집·이용 동의서 〈개정 2025.09.29.〉

연사료·원고료·자문료 지급을 위한 개인정보 수집 · 이용 동의서

한국국제협력단은 연사료·원고료·자문료 지급을 위하여 개인정보보호법 제15조 및 제22조, 제24조에 따라 개인정보 수집·이용 및 제공에 대한 귀하의 동의를 받고자 합니다. 자세히 읽어보신 후 동의 여부를 결정해 주시기 바랍니다.

■ 개인정보 수집·이용 내역(필수항목)

수집·이용 항목	수집·이용 목적	보유기간
이름, 생년월일, 전화번호, 소속, 직급, 이메일, 주소, 학력, 경력, 수상실적, 저역서 및 학술논문(이력서), 계좌번호, 사진	발표료·원고료·자문료 지급을 위한 전문가 등급 책정 및 지급	2년(재동의)

※ 위의 개인정보 수집·이용에 대한 동의를 거부할 권리가 있습니다. 그러나 동의를 거부할 경우 발표료·원고료·자문료 지급이 불가합니다.

☞ 위와 같이 개인정보를 수집·이용하는데 동의하십니까?

본인 □ 동의함 □ 동의하지 않음

[기타 고지사항]

개인정보보호법 제15조 제1항 제4호, 제24조의2 제1항 제1호에 따라 정보주체의 동의 없이 개인정보를 수집·이용합니다.

개인정보 항목	개인정보 처리사유	보유기간	수집 근거
주민등록번호, 여권번호, 운전번호, 외국인등록번호 중 선택	원천징수영수증 발행	5년	국세기본법시행령 제68조(민감정보 및 고유식별정보의 처리) 3항

■ 위와 같이 개인정보를 수집·이용하는 데 동의합니다.

년 월 일

본인 성명 (서명 또는 인)

한국국제협력단 이사장 귀중

[별지 제3-2호 서식] 개인정보 수집·이용 동의서 (영문)

JIDC
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- *For author*

The Journal of International Development Cooperation collects and uses your personal information to provide manuscript fee when the author's manuscript is determined to be published on the Journal of International Development Cooperation.

1. Purpose of Personal Information Collection and Usage

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• Two years (after then, immediately destroyed.)

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Signature : _____

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[별지 제4호 서식] 국제개발협력지 심사 결과서

국제개발협력지 20xx년 □ 1호 / □ 2호

국제개발협력지 심사 결과서

□ 초심 □ 재심

심사자명		**소 속**	
논문제목			
심사일자			
심사총평 (저자에게 전하는 말)			

	영역	내용	판정등급				
			A (20)	B (16)	C (12)	D (8)	E (4)
심사 기준	연구의 활용가능성 (20점)	○ 연구내용의 구체 수준 ○ 관련된 개발협력 대내외 환경·맥락에 대한 분석적 토대 수준 ○ 논문이 정보의 양 및 구체성 ○ 개발협력 전략·사업 시사점에 대한 연구내용의 유의미 수준					
	연구 독창성 (20점)	○ 연구주제, 방법, 설계 측면에서의 참신성					
	내용의 논리성 (20점)	○ 연구배경과 문제제기 과정 간의 논리적 연계성 ○ 국제개발협력 분야 논문으로서의 구성의 적합성					
	연구 방법론의 적절성 (20점)	○ 문제제기와 방법론 간 연계의 타당성 ○ 연구목적과 연구내용 간 연계의 타당성 ○ 연구과정의 논리적 타당성과 신뢰성 ○ 모집단 설정, 표본선정, 조사결과의 연구적 해석의 적절성 ○ 결론 도출의 타당성					
	연구서술의 적절성 (20점)	○ 인용 자료에 대한 저자·문헌 표기 등 성실한 서술 여부(referencing) ○ 참고문헌 작성에 대한 관례 준수 여부 ※ 표절부분이나 인용이 적절하게					

		되지 않은 부분은 지적 요망 ○ 연구서술에 대한 가독성 ○ 목차 구성과 서술 방식의 논리적 흐름					
	총점		( )점 / 100점				

최종판정	**게재 (100-90점)**	**수정후 게재 (89-80점)**	**수정후 재심사 (79-70점)**	**게재불가 (69-0점)**

편집위원에게 전하는 심사의견	

[별지 제5호 서식] 국제개발협력지 수정 논문 제출기한 연장 신청서 〈개정 2025.09.29.〉

국제개발협력지 수정 논문 제출기한 연장 신청서

주저자명:
소 속 :
연구명 :
당초 논문 제출 기한 :
연 락 처 :

본인은 국제개발협력지 운영지침 제29조(수정논문 제출기한 및 게재 확정) ④항에 의거하여 다음과 같이 수정 논문제출 기한을 연장 신청하오니 승인하여 주시기 바랍니다.

제29조(수정논문 제출기한 및 게재 확정)
④ 수정된 논문의 제출기한은 심사결과 통보일로부터 최대 1개월로 하고 주저자의 서면 요구에 의하여 1개월 범위 내에서 기간을 연장할 수 있으며, 특별한 사유없이 제출기한을 초과하는 경우에는 투고를 자진 철회하는 것으로 간주한다. 주저자는 수정논문 제출기한 연장이 필요한 경우, 심사결과 통보일로부터 1개월 이내에 별지 제5호 국제개발협력지 수정논문 제출기한 연장 신청서 양식을 작성하여 편집간사에게 제출하여야 한다.

1. 연장 신청기간 (1개월 이내) : 년 월 일까지
2. 연장 신청사유 : (구체적으로 작성)

년 월 일

신 청 인 : (인)

한국국제협력단 이사장 귀중

[별지 제5-2호 서식] 국제개발협력지 수정 논문 제출기한 연장 신청서 (영문)
〈개정 2025.09.29.〉

Application for an Extension of the Deadline to Submit a Revised Manuscript to JIDC

First author name:

Organisation:

Title of Manuscript:

Original manuscript resubmission deadline:

Contact:

In accordance with Article 29 (Deadline for Submission of Revised Manuscripts and Confirmation of Publication), paragraph 4 of the *"Operational Guideline for Journal for International Development Cooperation (JIDC),"* I would like to request an extension of the deadline for submission of revised manuscripts as follows:

Article 29 (Deadline for Submission of Revised Manuscripts and Confirmation of Publication)
Paragraph 4. The deadline for submission of the revised paper is up to one month from the date of notification of the result of the review, which can be extended within one month upon written request of the first author; if the deadline is exceeded without special reason, the manuscript is considered as voluntarily withdrawn.

1. Extension Request Deadline (within 30 days) : *YYYY/MM/DD*
2. Reason for Requesting to Extend : *(be specific)*

Date: YYYY/MM/DD

Name of the author:_____

Signature:_____

[별지 제6호 서식] 심사료 지급 기준 〈개정 2025.09.29.〉

국제개발협력 심사료 지급 기준

□ 심사료

구분	지급액	비 고
심사료	80,000원	■ 심사위원별 심사 대상 논문 1건당 80,000원을 원칙으로 함. ■ 심사위원 1명은 한 호당 최대 3건의 논문 심사 가능 (1인당 심사료 최대 240,000원 지급 가능) ■ 국문, 영문 논문 일체에 대한 심사료 기준 동일

o 단내직원이 심사를 진행한 경우에는 내부 ‘교육훈련계획’에 따라 학습시간을 부여한다.

국제개발협력 21권 1호

발 행 일 2026년 6월 30일
발 행 처 한국국제협력단
편 집 인 ODA연구교육원
주 소 경기도 성남시 수정구 대왕판교로 825(우: 13449)
전 화 031-740-0749
홈페이지 http://www.koica.go.kr
인 쇄 경성문화사(02-786-2999)

[무단복제를 금함]
pISSN 2093-212X eISSN 2671-9797

연구자료
연구교육 2026-01-227

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KOICA 한국국제협력단

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