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Gendered Access to Higher Education A Comparative Analysis of Sandwich and Full-Time Student Admissions at the University of Education, Winneba

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Abstract

This study examines gendered patterns of access to, and participation in, higher education through a comparative lens on the sandwich (distance) and full-time (regular) modes of study at the University of Education, Winneba (UEW). Drawing on admission statistics compiled by the University's Institute for Distance and e-Learning (IDeL) for nine consecutive academic years (2009/2010 to 2017/2018), the analysis tracks applications received, admission offers and registration outcomes, disaggregated by sex. The findings reveal a sustained feminisation of the sandwich mode: women received approximately 52.8 per cent of all admission offers and accounted for 54.9 per cent of registered students over the period, exceeding the share of women typically observed in regular Ghanaian university intakes. Women also converted offers into registration at a consistently higher rate than men (83.7 per cent against 76.7 per cent overall), and this advantage held in every year examined. Contrary to the common assumption that the sandwich mode mainly attracts women who cannot afford regular study, the available socio-economic evidence indicates that, the decisive factors are convenience, time, flexibility and availability rather than affordability. Women graduate at broadly the same rate as men, yet they remain concentrated in "female-typed" programmes such as Catering and Hospitality and Fashion, Design and Textiles Education. The paper argues that flexible delivery operates as an equaliser of access while leaving horizontal, programme-level segregation largely intact, and it offers recommendations for policy, institutional practice and further research.

Keywords: *gender; access to higher education; sandwich mode; distance education; feminisation; persistence; University of Education, Winneba; Ghana.*

INTRODUCTION

Access to higher education has become a central concern of education policy across sub-Saharan Africa, where rapid growth in demand has repeatedly outpaced the capacity of conventional, campus-based provision. In Ghana, public universities have responded by expanding flexible and distance modes of study, of which the "sandwich" programme is the most prominent. Under the sandwich arrangement, teaching is concentrated into intensive sessions during vacation periods, allowing students to combine study with employment, trade or family responsibilities. The University of Education, Winneba (UEW), through its Institute for Distance and e-Learning (IDeL), has been a national leader in this form of delivery, enrolling tens of thousands of students who might otherwise have been excluded from tertiary education.

Alongside the expansion of access, the question of who actually benefits from these opportunities has gained prominence. Gender, in particular, structures both the demand for and the experience of higher education. Women in Ghana have historically faced lower transition rates into tertiary education because of financial constraints, domestic and caregiving responsibilities, early marriage and entrenched social expectations. Flexible delivery has been proposed as a means of dismantling some of these barriers. Whether it does so in practice — and on what terms — is an empirical question that can be examined through institutional admission records.

This paper uses nine years of admission data from IDeL to compare how men and women move through the admission pipeline — from application, to the offer of a place, to actual registration — and to set the gender profile of the sandwich mode against what is known about the regular, full-time mode. In doing so, it seeks to move beyond the assumption that flexible study is simply a refuge for those who cannot afford conventional education, and to identify the factors that genuinely drive participation.

Statement of the Problem

Distance and sandwich education is frequently described as a second-best option chosen by those who lack the resources to study full-time. Where women predominate in such programmes, their participation is often read as evidence of disadvantage rather than agency. Yet aggregate enrolment figures alone cannot distinguish between competing explanations: a high female share could reflect financial exclusion from the regular mode, or it could reflect a positive preference for flexibility, convenience and the ability to study while earning. Without a careful, sex-disaggregated analysis of admission outcomes — and an honest reading of the socio-economic evidence — institutions risk designing policy around a mistaken diagnosis. This study addresses that gap by analysing the gendered structure of admissions at UEW's IDeL and interrogating the explanations commonly offered for the feminisation of the sandwich mode.

Objectives of the Study

The study pursues the following specific objectives:

1. To describe the trend in applications, admission offers and registrations in the sandwich mode at UEW over the 2009/2010 to 2017/2018 academic years.
2. To analyse the gender composition of admission offers and registered students, and to compare it with the pattern reported for the regular, full-time mode.

3. To compare the rate at which men and women convert admission offers into actual registration, as a measure of persistence at the point of entry.
4. To examine the explanations — affordability, convenience, time availability, perceived returns and household responsibilities — advanced for the feminisation of the sandwich mode, and to assess them against the available evidence.
5. To draw out the implications of the findings for access equity, institutional practice and future research.

Significance of the Study

The study is significant on three counts. First, it contributes empirical evidence to the debate on gender equity in Ghanaian higher education, using a continuous nine-year institutional series rather than a single-year snapshot. Second, it distinguishes analytically between access (the offer of a place) and persistence (the act of registering), a distinction often blurred in enrolment studies but crucial for understanding where gendered advantage or disadvantage actually arises. Third, by testing the affordability narrative against the convenience narrative, it offers institutions a sounder basis for the design of support services, programme portfolios and outreach. The findings are directly relevant to IDeL and UEW, and are transferable to other Ghanaian and African institutions operating comparable flexible-study models.

LITERATURE REVIEW

Gender and Access to Higher Education

Gender remains one of the most persistent axes of inequality in access to higher education, though its expression varies by region and level. In much of sub-Saharan Africa, women have historically been under-represented in tertiary institutions, a pattern attributed to the interaction of poverty, opportunity cost, domestic labour expectations and cultural norms that prioritise the education of sons. Scholarship on widening participation distinguishes between vertical inequalities (differences in the level or prestige of institutions and qualifications attained) and horizontal inequalities (differences in the fields of study pursued). A recurring finding is that even where women achieve numerical parity or majority in enrolment, they remain clustered in disciplines associated with caregiving, the household and the service economy, while remaining under-represented in science, technology, engineering and mathematics. Equity, therefore, cannot be read off headcount alone.

Distance and Sandwich Education in Ghana

Distance education in Ghana expanded substantially from the early 2000s as universities sought to absorb unmet demand without the capital cost of new residential infrastructure. The sandwich model — intensive face-to-face teaching during long vacations, supplemented by self-directed study — proved especially well-suited to serving working adults, teachers seeking upgrading and others unable to leave employment. The University of Education, Winneba, established to train teachers and education professionals, built one of the country's largest distance operations through its Institute for Distance and e-Learning. Because the sandwich mode removes the requirement of continuous residence on campus, it lowers several of the practical barriers — relocation, foregone income, and the suspension of family duties — that bear disproportionately on women.

The Feminisation of Distance Education

Internationally, distance and open-learning systems have frequently displayed a higher female share than their conventional counterparts. This "feminisation" is commonly explained by the compatibility of flexible study with the gendered division of household labour: women, who continue to shoulder the bulk of domestic and caregiving work, can fit intensive vacation-based study around these responsibilities more readily than they can fit continuous residential study. Two contrasting interpretations of the same pattern recur in the literature. The deficit interpretation treats the female majority as a marker of exclusion — women turn to distance study because they cannot access or afford the regular mode. The agency interpretation treats it as a positive choice — women select flexible study because it fits their circumstances and lets them combine education with earning and family life. Distinguishing these interpretations requires evidence beyond enrolment counts, including data on persistence, programme choice and the socio-economic profile of entrants.

Conceptual Framing: Access, Persistence and Equity

This study adopts a simple pipeline framing of admission, comprising three sequential stages: application (expressed demand), the offer of a place (institutional access), and registration (realised participation, requiring the payment of fees and formal enrolment). Gendered advantage can arise at any stage, and the stage at which it arises carries different policy meaning. A higher female share of offers points to access equity; a higher female rate of converting offers into registrations points to persistence and to the capacity, or willingness, to meet the financial and practical demands of entry. By measuring both the composition of offers and the conversion rate by sex, the analysis locates precisely where the gendered pattern is generated, and thereby informs the interpretation of its causes.

METHODOLOGY

The study employs a quantitative, descriptive-comparative design based on the secondary analysis of institutional administrative records. Because the data describe events that have already occurred and were not manipulated by the researcher, the design is ex post facto. The analysis is comparative in two respects: it compares men and women within the sandwich mode, and it situates the sandwich-mode gender profile against the pattern reported for the regular, full-time mode.

The data were obtained from the Institute for Distance and e-Learning (IDeL), University of Education, Winneba. They cover nine consecutive academic years, from 2009/2010 to 2017/2018. For each year, the records report the total number of applications received and, disaggregated by sex, the number of admissions offers made and the number of students who subsequently registered. Over the nine-year period, IDeL received 108,639 applications, made 85,991 admission offers and registered 69,129 students.

Three categories of variable are analysed. **Volume** variables comprise applications received, offers made and students registered. **Composition** variables express the female and male shares of offers and of registrations as percentages. The **conversion (persistence) rate** is defined, for each sex, as the number of registered students divided by the number of admissions offers made, expressed as a percentage; it measures the proportion of admitted applicants who proceeded to formal enrolment. The difference between the female and male conversion rates, reported in percentage points, provides a direct measure of gendered persistence at the point of entry.

The data were tabulated and analysed using descriptive statistics — totals, percentages, ratios and year-on-year comparisons. Two visual displays support the analysis: a line graph of registered students by sex over time, and a grouped bar chart of conversion rates by sex and year. No inferential testing was undertaken, because the data constitute a complete population of admission records for the period rather than a sample, and because the unit of analysis is the institutional aggregate rather than the individual student.

The source table contained one internal arithmetical inconsistency. For 2012/2013, the reported total of registered students (6,454) and the reported number of registered men (2,711) jointly imply 3,743 registered women, whereas a separate entry recorded 3,143. The figure of 3,743 was adopted because it reconciles the row total with the reported male figure and yields a series internally consistent with the rest of the data.

A second, negligible discrepancy of seven students appeared in the 2015/2016 offers total; throughout this paper, sex-specific figures are treated as authoritative and group totals are computed from them. These adjustments do not alter any substantive finding.

Limitations

- Applications received are not disaggregated by sex in the source records, so the gender analysis necessarily begins at the offer stage rather than the application stage.
- The data are institutional aggregates; they contain no individual-level information on income, occupation, marital status or programme of study, so explanations relating to socio-economic status are assessed against external evidence rather than tested directly within this dataset.
- The study covers a single institution and a single delivery mode, which bounds the generalisability of the findings, although the patterns are broadly consistent with those reported elsewhere.
- Conversion rate captures persistence only at the point of entry; it does not measure subsequent retention, progression or completion, which lie beyond the scope of the available data.

RESULTS AND FINDINGS

Overview of the Admission Pipeline

Table 1 presents the full admission record for the sandwich mode over the nine academic years. Across the period, IDeL received 108,639 applications, of which 85,991 resulted in an offer of a place — an overall offer rate of 79.2 per cent — and 69,129 offers translated into registration, an overall registration rate of 80.4 per cent. Volumes fluctuated from year to year, peaking in 2010/2011, when 12,309 offers were made and 10,771 students registered, and reaching their lowest registration in 2013/2014, when 6,050 students enrolled. These fluctuations affected both sexes, but, as the remainder of this section shows, they did not disturb the persistent female advantage in both the composition of intake and the rate of conversion.

Academic Year	Applications Received	Admission Offers			Registered Students		
		Male	Female	Total	Male	Female	Total
2009/2010	9,250	3,715	4,347	8,062	3,378	3,982	7,360
2010/2011	17,050	5,844	6,465	12,309	4,958	5,813	10,771
2011/2012	12,951	4,234	5,074	9,308	3,611	4,453	8,064
2012/2013	12,337	3,551	4,439	7,990	2,711	3,743	6,454
2013/2014	9,232	4,112	3,994	8,106	2,809	3,241	6,050
2014/2015	13,002	5,702	5,991	11,693	3,571	4,320	7,891
2015/2016	13,705	5,464	5,607	11,071	4,181	4,677	8,858
2016/2017	10,369	3,968	4,593	8,561	2,933	3,702	6,635
2017/2018	10,743	4,020	4,871	8,891	3,011	4,035	7,046
Total	**108,639**	**40,610**	**45,381**	**85,991**	**31,163**	**37,966**	**69,129**

Table 1. *Applications, admission offers and registrations by sex, sandwich mode, UEW IDeL, 2009/2010–2017/2018.*

Gender Composition of Offers and Registrations

Women were the majority at every gate of the admission pipeline after application. Of the 85,991 offers made over the period, 45,381 (52.8 per cent) went to women and 40,610 (47.2 per cent) to men. The female majority was wider still among those who actually enrolled: women made up 37,966 of the 69,129 registered students, or 54.9 per cent, against 31,163 men. The widening of the female share between the offer stage (52.8 per cent) and the registration stage (54.9 per cent) is the first sign that women not only secured more places but were also more likely to take them up. This female majority stands in clear contrast to the regular, full-time mode, in which women have typically accounted for approximately 46 per cent of intake over the comparable period — a gap of several percentage points that illustrates how flexible delivery reshapes the gender balance of access.

Trend in Registered Students, by Sex

Figure 1 plots the number of registered students by sex across the nine years. The two series move together — rising to a common peak in 2010/2011, falling to a trough in the middle years, and partially recovering thereafter — which indicates that year-to-year shifts were driven by system-wide factors affecting both sexes rather than by changes specific to one group. The decisive feature of the figure, however, is that the female line lies above the male line in every single year of the series. At no point in the nine years did male registrations exceed female registrations. The vertical distance between the lines also tends to widen in the leaner years, foreshadowing the conversion-rate analysis that follows.

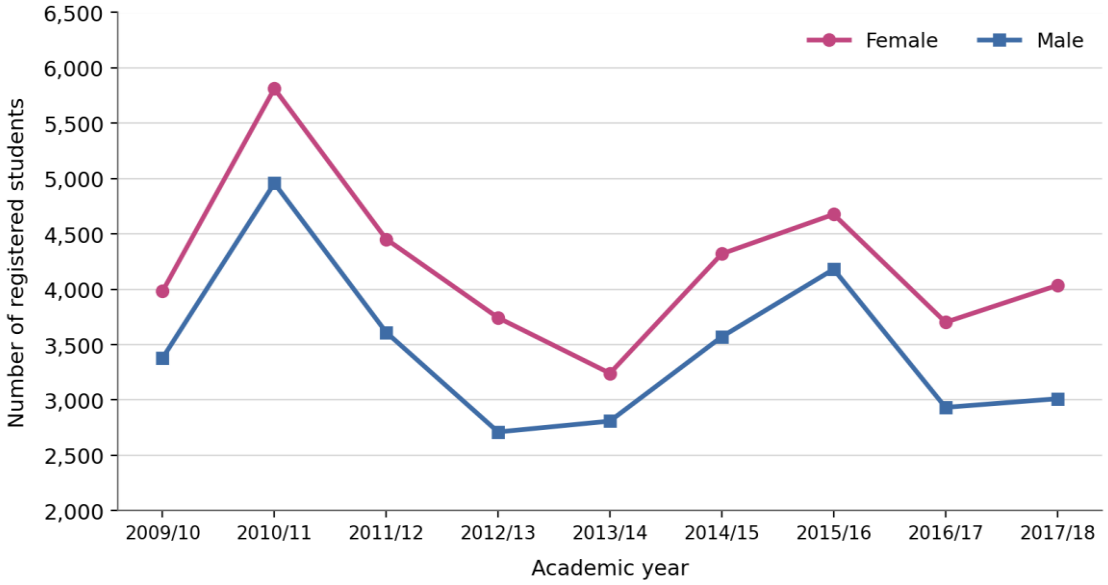


Figure 1. *Registered students by sex, sandwich mode, 2009/2010–2017/2018. The female series lies above the male series in every year.*

Conversion of Offers into Registration, by Sex

The conversion rate — the share of admission offers that resulted in actual registration — isolates persistence at the point of entry from the prior question of who was offered a place. Table 2 and Figure 2 report this measure by sex and year. Over the whole period, women converted 83.7 per cent of their offers into registration, against 76.7 per cent for men, a female advantage of 7.0 percentage points. This advantage was not an artefact of a few unusual years: the female conversion rate exceeded the male rate in every one of the nine years examined.

Table 2. *Conversion rate (registered ÷ offers) by sex, and female–male gap in percentage points (pp).*

Academic Year	Male Conversion	Female Conversion	Gap (F − M, pp)
2009/2010	90.9%	91.6%	+0.7
2010/2011	84.8%	89.9%	+5.1
2011/2012	85.3%	87.8%	+2.5
2012/2013	76.3%	84.3%	+8.0
2013/2014	68.3%	81.1%	+12.8
2014/2015	62.6%	72.1%	+9.5
2015/2016	76.5%	83.4%	+6.9
2016/2017	73.9%	80.6%	+6.7
2017/2018	74.9%	82.8%	+7.9
Overall	**76.7%**	**83.7%**	**+7.0**

Figure 2 displays the same information graphically. In each year the female bar is taller than the male bar. The gap was narrowest in 2009/2010 (0.7 percentage points), when both sexes converted offers at above 90 per cent, and widest in 2013/2014, when the female rate of 81.1 per cent stood 12.8 percentage points above the male rate of 68.3 per cent. Notably, the female advantage tended to grow precisely in the years when overall conversion fell — 2012/2013 to 2014/2015 — suggesting that when conditions made enrolment harder, men

withdrew from the pipeline at a faster rate than women. In other words, women were not only admitted in greater numbers; once admitted, they were also more resilient in completing the step from offer to enrolment.

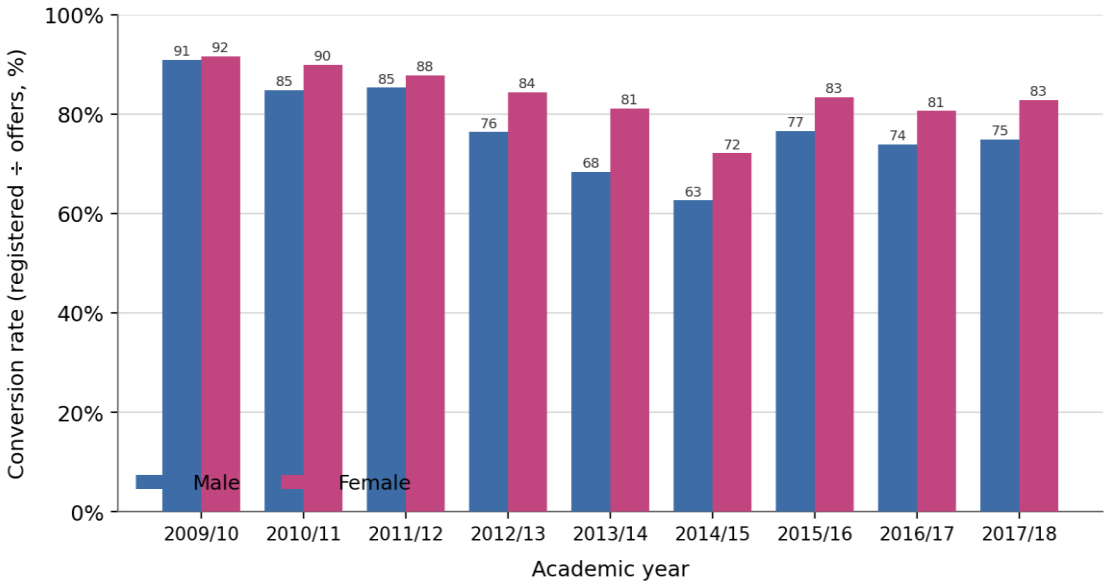


Figure 2. *Conversion rate by sex and academic year. The female bar exceeds the male bar in every year; the gap peaks in 2013/2014.*

DISCUSSION

Access Equity: Closing the Gender Gap

The most immediate implication is one of access equity. With women receiving 52.8 per cent of offers — several points above their roughly 46 per cent share of regular-mode intake — the flexible mode is demonstrably narrowing, and in this institution reversing, the gender gap in tertiary access. By dispensing with continuous residence and concentrating teaching into vacation periods, the sandwich model removes barriers that fall most heavily on women: the need to relocate, the suspension of income-generating work and trade, and the interruption of caregiving. For women managing childcare, a small business or financial constraints, the combination of flexibility and comparatively lower cost lowers the threshold to entry. The mode thus functions as a practical instrument of widening participation.

Persistence and Retention at the Point of Entry

Access without follow-through would mean little, and here too the evidence favours women. The higher female conversion rate — 83.7 per cent against 76.7 per cent — means that, once offered a place, women were markedly more likely than men to register and pay their fees. This pattern is consistent with women approaching the opportunity with a high degree of commitment and treating the offer as one to be acted upon rather than deferred. The fact that the female advantage held in every year, and widened in the harder years, indicates a durable difference in persistence rather than a transient one.

Drivers of Participation: Convenience Rather than Affordability

It is tempting to read the female majority as evidence that women turn to the sandwich mode because they cannot afford regular study. The evidence, however, does not support affordability as the primary driver. The socio-economic data available indicate that the choice of the sandwich mode is governed chiefly by convenience, time and availability rather than by an inability to pay for regular education. Several strands of evidence converge on this reading:

- The sandwich structure allows students to study while working or trading, which means many participants are self-funding from current earnings rather than turning to flexible study as a last resort. Participation is organised around earning, not around the absence of means.
- Women may attach a higher perceived return to education where their labour-market options are otherwise constrained, making the investment of vacation time particularly worthwhile and the decision to enrol particularly firm.
- Household structure matters: women often have the scheduling latitude to study during vacation periods while partners are themselves engaged in full-time education or business, allowing the family's responsibilities to be managed around, rather than against, the woman's studies.

On this interpretation, the higher female conversion rate is itself an argument against the affordability thesis: if women were enrolling chiefly because they lacked resources, one would expect them to be more, not less, likely to falter at the fee-paying stage. That they convert offers at a higher rate than men is more consistent with a deliberate, well-resourced choice of a mode that suits their circumstances.

Economic Shocks and the 2013/2014 Gap

The widening of the conversion gap in the middle years, peaking at 12.8 percentage points in 2013/2014, invites a specific reading. In years of economic pressure, the capacity to convert an offer into a paid registration is tested. The data suggest that such pressure bore more heavily on men's ability to follow through than on women's. Whether because women's study was more often financed from independent trading income, or because they were more determined to protect an investment with a high perceived return, the female pipeline proved the more shock-resistant of the two. The episode reinforces the broader finding that women's participation in the sandwich mode rests on a relatively robust footing.

Graduation Parity

The female advantage in access and entry does not come at the expense of outcomes. The available evidence indicates that women graduate at broadly the same rate as men. The feminisation of intake is therefore not a story of admitting women who then fail to complete; rather, women enter in greater numbers, enrol more reliably and finish on a par with their male counterparts. This parity of completion strengthens the equity case for flexible delivery, since the expansion of access translates into a comparable expansion of attainment.

Programme Choice and Horizontal Segregation

One important qualification tempers the otherwise positive picture. Although women achieve a numerical majority overall, they remain concentrated in "female-typed" programmes such as Catering and Hospitality and Fashion, Design and Textiles Education. The evidence suggests this clustering reflects fields that genuinely interest the women who enrol, rather than overt exclusion from other programmes. Nevertheless, the pattern is the classic signature of horizontal segregation: equality in the volume of participation coexisting with inequality in its distribution across fields. Flexible delivery has equalised access to higher education as a whole, but it has not, on its own, redistributed women across the full range of disciplines. Numerical parity at the gate is thus compatible with continued specialisation by field once inside.

CONCLUSION AND RECOMMENDATIONS

Nine years of admission data from UEW's Institute for Distance and e-Learning tell a clear and coherent story. The sandwich mode is strongly feminised: women secured 52.8 per cent of admission offers and 54.9 per cent of registrations, exceeding their share of the regular mode, and they converted offers into enrolment at a consistently higher rate than men, by an overall margin of seven percentage points that held in every year. This is not the profile of a population driven into flexible study by an inability to pay. The weight of the socio-economic evidence indicates that women choose the sandwich mode for its convenience, its compatibility with work and trade, and its fit with their time and household circumstances — a choice of agency rather than a counsel of necessity. Women graduate on a par with men, so the expansion of access yields a genuine expansion of attainment. The principal qualification is that this equality of access remains accompanied by horizontal segregation, with women still concentrated in a narrow band of "female-typed" programmes. In sum, flexible delivery operates as a powerful equaliser of access while leaving the gendered distribution of fields largely untouched.

Recommendations

Flowing from these findings, the study offers the following recommendations:

1. Sustain and expand flexible delivery. Given its demonstrated power to widen women's access without compromising completion, the sandwich and distance modes should be protected and, where capacity allows, expanded as a deliberate instrument of equity.
2. Design support around convenience, not deficit. Because participation is driven by the management of time and competing responsibilities rather than by destitution, institutional support should prioritise scheduling, childcare-friendly session timing, and predictable academic calendars over assumptions of remedial financial need — while keeping targeted financial assistance available for those who require it.
3. Address horizontal segregation. UEW and IDeL should actively encourage women's participation across the full programme portfolio, including science, technology and other non-traditional fields, through outreach, mentoring and the visible profiling of female role models, so that numerical parity is matched by breadth of choice.
4. Strengthen sex-disaggregated data collection. Recording applications, and ultimately progression and graduation, disaggregated by sex and mode would allow the gender analysis to begin at the application stage and to extend through to completion, closing the evidential gaps identified in this study.
5. Commission individual-level research. A study using individual socio-economic microdata — on income, occupation, marital status and motivation — would allow the convenience-over-affordability conclusion to be tested directly rather than inferred, and would refine the design of institutional policy.

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Note: The data analysed in this paper were supplied by the Institute for Distance and e-Learning (IDeL), University of Education, Winneba. The scholarly references below are indicative of the relevant literature and should be verified against original sources before formal submission or citation.

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