




# Corrigendum: Critical analysis of the role of innovative capabilities on firm performance: Evidence from the University of Cape Coast administration in Ghana

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**Dates:**

Published: 15 Oct. 2021

**How to cite this article:**

Adom, A.Y., Boateng, L. & Gnankob, R.I., 2021, 'Corrigendum: Critical analysis of the role of innovative capabilities on firm performance: Evidence from the University of Cape Coast administration in Ghana', *Africa's Public Service Delivery and Performance Review* 9(1), a580. <https://doi.org/10.4102/apsdpr.v9i1.580>

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In the version of the article initially published, Adom, A.Y., Boateng, L. & Gnankob, R., 2019, 'Critical analysis of the role of innovative capabilities on firm performance: Evidence from the University of Cape Coast administration in Ghana', *Africa's Public Service Delivery and Performance Review* 7(1), a256. <https://doi.org/10.4102/apsdpr.v7i1.256>, the name of the third author was given incorrectly. The correct name should be Robert I. Gnankob instead of Robert Gnankob in the 'Authors' and 'How to cite this article' sections.

This correction does not alter the study's findings of significance or overall interpretation of the study's results. The authors apologise for any inconvenience caused.

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**Note:** DOI of original article: <https://doi.org/10.4102/apsdpr.v7i1.256>

# Critical analysis of the role of innovative capabilities on firm performance: Evidence from the University of Cape Coast administration in Ghana



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## Dates:

Received: 10 Jan. 2019

Accepted: 29 July 2019

Published: 06 Dec. 2019

## How to cite this article:

Adom, A.Y., Boateng, L. & Gnankob, R., 2019, 'Critical analysis of the role of innovative capabilities on firm performance: Evidence from the University of Cape Coast administration in Ghana', *Africa's Public Service Delivery and Performance Review* 7(1), a256. <https://doi.org/10.4102/apsdpr.v7i1.256>

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**Background:** The increasingly competitive business environment has made it imperative for organisations to put in place systems and processes that will guarantee appreciable firm performance in the interest of its stakeholders. To this end, several solutions have been developed to ensure that desired firm outcomes are achieved despite the dynamics of competition. However, critical review of extant literature reported mixed results on the innovative capabilities of firms and their performance nexus. Therefore, this article explored the role of innovative capabilities on the performance of firms with the University of Cape Coast as a case study.

**Aim:** This paper explored the role of innovative capabilities on the performance of firms with the evidence from the University of Cape Coast.

**Setting:** The research was carried out in Ghana to assess innovative capabilities and performance relationship among institutions of higher learning with evidence from the University of Cape Coast.

**Methods:** Using a descriptive research design, the study collected data from 250 administrative staff in the university of Cape Coast. The findings of the study confirmed that the administrative staffs of the University of Cape Coast have embraced innovation at different levels of operations.

**Results:** The findings indicate that innovation in the organisation is able to promote high team spirits, risk taking, productivity, low resistance to change, competitive advantage, increase market share, increase productivity among staffs, growth and profitability of educational institutions, creates loyalty towards the institution's services, and makes teaching and learning convenient.

**Conclusion:** It was concluded that there have been some innovations in University of Cape Coast and so much of such innovations would make teaching and learning more convenient, lead to higher competitive advantage and market share and boosting overall performance.

**Keywords:** Innovative; capabilities; firm; performance; University of Cape Coast; UCC.

## Introduction

The increasingly competitive business environment has made it imperative for organisations to put in place systems and processes that will guarantee appreciable firm performance in the interest of its stakeholders. To this end, several solutions have been developed to ensure that desired firm outcomes are achieved despite the dynamics of competition. In today's business environment, organisations keep evolving ways of outwitting one another in the marketplace in order to remain competitive and achieve strategic goals. One such strategy is innovation. According to Odumeru (2013:18), '[i]nnovation is one concept that has gained enormous popularity in both business research and practice'. Research indicates that firm performance is influenced by innovation (Durán-Vázquez, Lorenzo-Valdés & Moreno-Quezada 2012; Likar, Koper & Fatur 2014; Nybakk & Jenssen 2012; Oke, Walumbwa & Myers 2012; Yen 2013). Undertaking research on these constructs is important for organisations as managers should be aware of the impact of different variables on firm performance in order to manage them in an effective manner (Bigliardi 2013; Ndrejoni & Elmazi 2012). Firm performance is an important indicator of firm success (Stegerean & Gavrea 2010). Apart from firm performance, firm success also relates to employee skills levels, personnel development, quality of strategic planning and the ability to understand and adapt to the nature and dynamics of the business environment (Zhou, Yim & Tse 2005). However, firm performance is arguably the most important indicator of firm success and one of the most important variables in management research (Stegerean & Gavrea 2010).

This research will help determine how innovative capabilities in the administrative sector have improved students' performance. It will also serve as a reference for future studies on similar topics. The research work looks at how performance outcomes of organisations have been influenced by their innovation strategies, drawing evidence from literatures. Therefore, the following hypothesis was developed to help achieve the objectives of the study: there is a positive relationship between innovative capabilities and performance of University of Cape Coast (UCC)'s administration.

## Literature review

This section discusses the issues of scholarly perspectives on innovative capabilities and firm performance nexus. It presents the theory that underpins the study and the general overview of the constructs under study.

## Theoretical review

Many theories underpin the concept of innovation and innovative capabilities. This study utilised resource-based theory, which examines the relationship between internal possessions of the firm and its performance. Scholars of the theory, such as Lippman and Rumelt (1982), Wernerfelt (1984), Barney (1986) and Peteraf (1993) placed an emphasis on the need for an organisation to continuously improve upon its resources within. These resources have been classified as physical, human and firm resources. Physical resources include all plant and equipment, location, technology, raw materials and machines; human resources include all employees, training, experience, intelligence, knowledge, skills and abilities; and firm resources include firm structure, planning processes, information systems, patents, trademarks, copyrights and databases (Hesterly & Barney 2008).

Furthermore, Akio (2005), Das and Teng (2000), Powell (2001) and Barney, Ketchen and Wright (2011) pointed out that an organisation's success is linked to how valuable its internal resources are relative to other firms. They suggested that these resources must be rare, not easy to be copied and non-substitutable. When these resources are effectively utilised, they result in competitive advantage and high and sustained levels of firm performance (Walker 2004 cited in Bowman and Ambrosini 2003). This theory is relevant to this study because it gives a clear picture of what improvements firms should carry out to beat competition and attract performance.

## Concept of innovation

Innovation is the most fundamental source for a firm's success and survival in such a competitive complex and intellectual environment (Abbing 2010; Cho & Pucik 2005). BusinessDictionary.com defines innovation as the process of translating an idea or invention into a good or service that creates value or for which customers will pay. Innovation is a strategic tool for firms to survive and gain competitive advantages in the global marketplace (Karabulut 2015). Innovative firms can improve their performances, beat their

competitors and provide value to their stakeholders. To be called an innovation, an idea must be replicable at an economical cost and must satisfy a specific need. Innovation involves deliberate application of information, imagination and initiative in deriving greater or different values from resources and includes all processes by which new ideas are generated and converted into useful products. In business, innovation often results when ideas are applied by the company in order to further satisfy the needs and expectations of the customers.

Innovation is a source of competitive advantage for a firm (Zawislak et al. 2012). According to Oslo Manual on Organisation for Economic Co-operation and Development (OECD 2005:46), an innovation is:

... the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new firm method in business practices, workplace organisation or external relations.

Rajapathirana and Hui (2018:45) opined that 'innovation is no longer just a matter of competitive advantage, but a matter of survival'. Therefore, the organisation's ability to understand and implement the changing dimensions of innovations offers it the opportunity to integrate its competences for a better competitive advantage.

In the area of strategic management, it is argued that company sustainability can only be realised by discerning in advance and finding new answers, which include the development of the firm as well as modifying old and developing new products. Strategic management theory also posits that innovation is the primary means by which organizations adjust to their environment supra system (Mintzberg 2008). Prior researchers have put this concept into two categories as it being 'evolutionary or revolutionary' (Serdyukov 2017), 'sustaining or disruptive' (Christensen & Overdorf 2000; Yu & Hang 2010). While evolutionary innovations lead to continued improvement, revolutionary innovations bring about a comprehensive change, entirely overhauling and/or replacing the old with the new, often in a short time period. Furthermore, while sustaining innovation spreads the current dimensions of performance (e.g. continuous improvement of the curriculum), disrupting innovation, such as a national reform, radically changes the whole field.

Innovation does not only apply to products, but also play a great role in the education sector (Huang et al. 2012):

It is widely believed that countries' social and economic well-being will depend to an ever-greater extent on the quality of their citizens' education: the emergence of the so-called 'knowledge society', the transformation of information and the media, and increasing specialization on the part of organizations all call for high skill profiles and levels of knowledge. Today's education systems are required to be both effective and efficient, or in other words, to reach the goals set for them while making the best use of available resources. (Cornali 2012:255).

The OECD (2005:47) report indicated that 'the pressure to increase equity and improve educational outcomes for

students is growing around the world'. In the same vein, Serdyukov (2017) reported that in the USA, fundamental gravity to innovate comes from political, economic, demographic and technological forces that emanated from both inside and outside the nation.

The Oslo Manual (OECD 2005:47) 'classified innovation as product innovation, marketing innovation, firm innovation and process innovation'.

## Product innovation

Karabulut (2015) defines product innovation as the development of new products, changes in design of established products, or use of new materials or components in manufacture of established products. In other words, anything which is new to the business and its product range is counted as innovation, even if similar products are available elsewhere or if the change is an incremental one. This type of innovation can be recognised easily by stakeholders of a firm because it usually requires continuous research and development to be competitive in the market. It is 'the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses' (OECD 2005:48). This includes significant improvements in technical specifications, components and materials, incorporated software, user-friendliness or other functional characteristics (Karabulut 2015). Günay (2007) posits that a new product can be developed by combining current technologies and using them differently or using radical technologies. Deming (1986) is of the view that firms have to carefully recognise the needs of customers and make products and services to create better lives to them in order to survive in the long term.

## Process innovation

According to Rajapathirana and Hui (2018), process innovation is the application of new or significantly improved production or delivery methods. It may be considered changes in tools, human capital and working methods, or a combination of these, such as installation of new or improved software to speed up the claim settlement process and policy issuing (OECD 2005). In the view of Karabulut (2015:1357), process innovation serves as a tool to improve firm productivity. A firm may 'adopt new technologies, buy new machineries, train their employees and reorganize their processes to make a process innovation'. Atalay, Anafata and Sarvan (2013) defined process innovation to include significant changes in techniques, equipment and/or software (e.g. installation of new or improved manufacturing technology, such as automation equipment or real-time sensors that can adjust processes, computer-aided product development). Firms are placed at an advantage race if their processes in the design of a product or service, the brand and, the kind of information technology they use are consistently changing relative to their competitors.

## Marketing innovation

Marketing innovation is seen as the implementation of a new marketing method involving significant changes in product

design or packaging, product placement, product promotion or pricing (Atalay et al. 2013). The Oslo Manual (OECD 2005:49) defines a marketing innovation as 'the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing'. It highlights that a marketing innovation may open new markets, address customer needs and reposition products in the market to increase sales. Marketing innovations are aimed at better addressing customer needs, opening up new markets or newly positioning a firm's product with the objective of increasing the firm's sales.

## Organisational innovation

A firm's innovation is the execution of the different firm procedures in the organisation's practices, workplace, business, or outside relations (Meroño-Cerdan & López-Nicolas 2013). Firm innovation is like outsourcing, partnership, subcontract plus organisation work practice such as quality management, reengineering and lean management (Karim Suhag et al. 2017). Karabulut (2015) believes that 'organisational innovation expands the capabilities and vision of a firm, improves employee satisfaction, and leads to firm transformation'. Gümüş and Gümüş (2015) are also of the view that a firm innovation can be related to new communication and cost system.

Firm innovation can lead to improvement in the performance of the firm by reducing administrative and transaction cost, while also increasing the workplace satisfaction (Rajapathirana & Hui 2017).

## Innovation capabilities

The term 'innovation capability' is understood in varied and diffuse forms in the literature. Scholars have sparked debates on the appropriate definition of innovation capabilities. Lau, Yam and Tang (2010) stressed that innovation capability facilitates a firm in applying appropriate process technologies to develop new products in order to meet the market needs and eliminate competitive threats. Narcizo, Canen and Tammela (2013) stated that there are many definitions for it, which has generated divergence both about its proper conceptualisation and the contexts in which it should be employed. A firm's innovation capability can be understood as the potential to innovate (Saunila, Pekkola & Ukko 2014). Lerro, Linzalone and Schiuma (2009) defined it as the ability to continuously transform knowledge and ideas into new products, processes and systems for the benefit of the firm and its stakeholders. It has been expounded by Lawson and Samson (2001) that innovation capabilities are the so-called higher-order capabilities, that is, the ability to mould and manage multiple capabilities.

Organisations possessing this innovation capability have the ability to integrate key capabilities and resources of their firm to successfully stimulate innovation. Innovation capability is a collaborative environment that allows customers, suppliers, employees and other stakeholders to collaborate on innovation where appropriate. A company's



innovation capability can be described at several different levels and from several different perspectives (Olsson et al. 2010). Innovative capability can be described as an important factor that facilitates an innovative firm culture, the characteristics of internal promoting activities and the capabilities of understanding and responding appropriately to the external environment (Akman & Yilmaz 2008).

Assink (2006) posits that innovative capability is an internal driving energy to generate and explores radical new ideas and concepts, to experiment with solutions for potential opportunity patterns detected in the market's white space and to develop them into marketable and effective innovations, leveraging internal and external resources and competencies.

In this article, innovation capabilities can be seen as the shared efforts of the functions of an organisation to constantly and effectively monitor its available resources and competences while exploring other opportunities to capture success. To fully utilise innovative capabilities there should be a synergy among the functional areas of the firm in order to explore potential opportunities in the external environment. Gor, Mummassabba and Muturi (2015) have identified that superior innovation capability tends to implement and develop new product varieties to the existing product portfolio. It helps to shape up and manage multiple capabilities of the firm for supporting to integrating capabilities and stimulus into innovation successfully (Lawson & Samson 2001).

## Firm performance

Firm performance is a multidimensional concept whose indicators can be departmental, such as pertaining to production, finance or marketing (Sohn et al. 2007), or consequential such as pertaining to growth and profit (Wolff & Pett 2006). Firm performance includes real productivity or outcome of a business that is calculated in opposite to its planned productivity or targets and aims (karim Suhag et al. 2017). Firm performance has been defined as the capability of a firm to accomplish its goals and objectives with the help of talented administration, good governance and a constant rededication to accomplish business objectives (Karim Suhag et al. 2017). Firm performance is the outcome achieved in meeting internal and external goals of a firm (Wei, Liu & Herndon 2011). It is a desirable outcome an organisation derives from its strategic efforts.

## Empirical relationship innovation capabilities and firm performance

Innovativeness is an important determinant of an organisation's performance (Calantone, Cavusgil & Zhao 2002; Hult, Hurley & Knight 2004). Thus, firm performance can be improved through technical and administrative innovation besides other factors (Montes, Moreno & Morales 2005). Previous research has studied the effects of innovations and innovativeness on firm performance (Adriansyah & Afiff 2015; Bowen, Rostami & Steel 2010; Calantone et al. 2002;

Cainelli, Evangelista & Savona 2004; Gunday et al. 2011; Keskin 2006).

Atalay et al. (2013) conducted a study on top level managers of 113 firms operating in the automotive supplier industry to determine the relationships between innovation and firm performance and found that product and process innovation had significant and positive impacts on firm performance. Karim Suhag et al. (2017) examined the relationship between innovation and firm performance in the telecommunication sector. They used process innovation, product innovation and firm innovation as independent variables and data from a questionnaire administered to 200 employees were analysed through the SPSS v.20 software. Their study results showed that product innovation, process innovation and firm innovation have a positive impact on organisational performance. Furthermore, Saunila et al.'s (2013) study on a total of 311 data from a sample of 2400 randomly selected Small and Medium-Sized Enterprises (SMEs) revealed that there was significant and positive relationship between innovation capability and firm performance. Rajapathirana and Hui (2017) concluded that a company with higher innovation capabilities has influenced positively and very strongly. Alam (2006) found that a firm's innovation capabilities have a greater impact on the overall performance.

This article would further examine the relationship between innovation capabilities and organisational performance with special reference to UCC administrative staff.

## Research methodology

### Research design

The study adopted a descriptive design in examining the role of innovative capabilities on performance in the educational sector. The use of this research design allows the researchers to use both quantitative and qualitative methods in the analysis. The researchers employed a self-administered questionnaire method to collect quantitative data.

### Sample size and sampling procedure

The researchers used the 'Survey Monkey' software to determine the sample size. It required that the researchers fill in the population, confidence interval and margin of error so that the sample size will be determined automatically. The researchers estimated the confidence interval to be 95% and the margin of error to be 5% with a population of 3558. This gave a sample size of 347. The researchers adopted a convenient sampling technique that was used to retrieve information from staff members. The convenience sampling method is a simple approach where a sample is selected according to the convenience of the researchers (Saunders et al. 2016).

### Research instrument

This research seeks to employ a semi-structured questionnaire guide where both open and closed questions will be administered. As Kothari (2004) observed, questionnaires are

more objective than interviews because they gather responses in a standardised way. They are also easy to use when collecting information. Both closed-ended and open-ended questions were used. The open-ended items permitted a greater depth of response. The closed items captured personal details and attitude scales. This simply means the types of questions to be passed are open, probing and specific or closed questions.

## Data analysis

Data were analysed using tables. The study used descriptive and inference analysis. Data gathered were fed into the SPSS program using percentages and frequencies. Inferences were drawn from the tables through the use of frequencies. The data were also described in order to get a fair visual understanding of the responses from the respondents in the study.

## Ethical consideration

All the ethical principles in research were strictly adhered to in this study.

## Results and discussion

### Assessing the performance of University of Cape Coast Administration using product/service innovation

Respondents were asked about the priority for developing new products and services to students. Table 1 shows that the priority for new product development has been positive and effective. One hundred and seventeen (46.8%) respondents

**TABLE 1:** Priority for developing new products and services to students.

Responses	Frequency	%
Very poor	7	2.8
Poor	8	3.2
Neutral	43	17.2
Good	117	46.8
Very good	74	29.6
Sub-total	249	99.6
Missing system	1	0.4
<b>Total</b>	<b>250</b>	<b>100.0</b>

**TABLE 2:** Priority for satisfying students with added products and services.

Responses	Frequency	%
Very poor	5	2.0
Poor	11	4.4
Neutral	26	10.4
Good	124	49.6
Very good	80	32.0
Sub-total	246	98.4
Missing system	4	1.6
<b>Total</b>	<b>250</b>	<b>100.0</b>

**TABLE 3:** Using only frequencies.

Descriptions of variable	Very poor	Poor	Neutral	Good	Very good	Total	Missing system	Total
Commitment to fast and non-bureaucratic processes	9	34	56	90	60	249	1	250
Using decentralised decision-making approach	13	31	50	100	51	245	5	250
Support for idea generation and experimentation among staff	8	12	41	132	56	249	1	250
Reward for risk taking and action by staff	9	22	64	84	69	248	2	250

said the priority for new products and services development is good, 74 (29.6%) said it is very good, 43 (17.2%) respondents were indifferent, 8 (3.2%) said it is poor, 7 (2.8%) said it is very poor, with only 1 (0.4%) giving no response to the question.

The analysis here is that on the whole the priority for developing new products and services for stakeholders has been effective and positive, signifying the need for more development of new products and services.

The respondents were asked about the priority for satisfying students with added product and services. Table 2 shows that the priority for satisfying students with added products or services has been positive and effective. One hundred and twenty-four (49.6%) respondents said the priority for satisfying students with added services is good, 80 (32%) said it is very good, 26 (10.4%) respondents said it is neutral, 11 (4.4%) said it is poor and 5 (2%) said it is very poor, with only 4 (1.6%) giving no response to the question. The analysis shows that the priority for satisfying students with added services has been effective and positive and therefore should be encouraged.

### Assessing the performance of University of Cape Coast Administration using process innovation

The researchers asked four questions on the process innovation to examine its impact on the performance of the institution. The results are presented in Table 3. Regarding the question of the management's commitment to fast and non-bureaucratic processes, 90 respondents said management's commitment is good, 60 said it is very good, 56 were neutral, 34 said commitment is poor and 9 said it is very poor, with only 1 respondent giving no response to the question. This means that a good number of respondents support the view that management is committed to fast and non-bureaucratic processes. Also, on the question of the administration using a decentralised decision-making approach, 100 respondents said that decentralised decision-making approach is good, 51 said it is very good, 50 respondents remained neutral, 31 said it is poor and 13 said it is very poor, with 5 respondents giving no response to the question. With a large number of the respondents giving positive responses, it is therefore clear that the administration uses a decentralised decision-making approach.

Furthermore, on the topic of whether the administration supports idea generation and experimentation among staff, 132 respondents said that it is good, 56 said it is very good, 41 remained neutral, 12 said management support is poor and 8 said the support to idea generation is very poor, with only 1 respondent giving no response to the question. This

analysis shows that the administration supports idea generation and experimentation among the staff members of the institution. On the point of reward for risk taking and action by staff, 84 respondents said management reward for risk taking and actions among staff members is good, 69 said it is very good, 64 remained neutral, 22 said the reward for risk taking is poor and 9 said it is very poor, with only 1 respondent giving no response to the question. This therefore implies that management rewards staff for taking risk and actions. Inferences drawn from this analysis imply that the administration has been embarking on significant improvements on process innovation.

### Assessing the performance of University of Cape Coast Administration using marketing innovation

From Table 4, it can be seen that all the variables under marketing innovation of UCC administration have been analysed together. In relation to the administration's use of creative communication channels, 7 respondents answered 'very poor', 11 responded with a 'poor', 48 said the administration's use of creative communication channels was neutral, 99 said it was good, 78 said it was very good and 7 respondents gave no responses at all. It can be drawn from the analysis that as 99 and 78 respondents respectively believed that the administration's use of creative communication channels is good and very good, the administration is really doing well when it comes to the use of creative communication channels to reach out to its stakeholders.

As far as the accessibility of the administration's services by stakeholders is concerned, 3 respondents said it was very poor, 11 said it was poor, 48 said it was neutral, 118 said it was good and 69 said it was very good, with 1 not giving an answer. It can be inferred that as 118 of the respondents believed the administration's services are more accessible to stakeholders, the information is credible.

Staff interaction with stakeholders was also analysed and it was found that 4 respondents believed the interaction is very poor, 13 said it is poor, 38 said it is neutral, 118 said it is good, 75 said it is very good and 2 did not provide any response. Therefore, it can be concluded that the administration is doing a good job because a higher number (118) of the respondents said the interaction with stakeholders is good. Moreover, out of the 250 respondents of this study, 3 said customer relationship management of the administration is very poor, 16 said it is poor, 47 said it is neutral, 118 said it is good, 65 said it is very good and 1 did not respond. Therefore, we can clearly infer that the customer relation management of the administration is good.

Finally, in relation to transparency of information dissemination, 8 respondents said it was very poor, 28 said it was poor, 46 said it was neutral, 93 said it was good, 71 said it was very good and 4 gave no response. The conclusion drawn from this analysis is that management's dissemination of information from the top down to the last subordinate of the administration is good.

### Assessing the performance of University of Cape Coast Administration using organisational innovation

Table 5 shows that the data gathered on the firm innovation capability of the administration have been grouped into five variables. Of the respondents, 122 said that the attitude of management towards change is good, 44 said it is very good, 56 remained neutral, 20 said it is poor and 7 said it is very poor, with only 1 respondent not giving any response to the question. The analysis shows that management has a good attitude towards embracing change. On the question of the attitude of employees towards change, 115 respondents said that employees have good attitudes to change, 63 said it is very good, 49 remained neutral, 19 said it is poor and 3 said it is very poor, with only 1 respondent giving no response to the question. The analysis therefore shows that employees have a positive attitude towards change. On the question of support for teamwork, 131 respondents said that management has good support for teamwork and collaboration, 71 said it is very good, 37 remained neutral, 6 said it is poor and 4 said it is very poor, with only 1 respondent giving no response to the question. The analysis therefore shows that management encourages support for teamwork and collaboration in the institution. It can also be seen from Table 5 that the administration promotes participative decision-making. About this question, the data show that 122 respondents stated a good participative decision-making, 67 indicated a very good participation, 41 were neutral, 11 stated a poor participation and 8 said a very poor participation, with only 1 respondent giving no response to the question.

Also on the topic of the administration investing in research and development, 94 respondents said the administration's investment in research and development is good, 98 said it is very good, 43 remained neutral, 7 said it is poor, 7 said it is very poor, with only 1 respondent not giving any response to this question. Inferences can therefore be drawn from the analysis that the administration is making a very good investment in research and development in the institution.

**TABLE 4:** Using only frequencies.

Description of variables	Very poor	Poor	Neutral	Good	Very good	Total	Missing system	Total
Using creative communication channels to reach out to stakeholders	7	11	48	99	78	243	7	250
Accessibility of organisation's services to stakeholders	3	11	48	118	69	249	1	250
Staff interaction with stakeholders	4	13	38	118	75	248	2	250
Customer relationship management practices	3	16	47	118	65	249	1	250
Transparency in information dissemination	8	28	46	93	71	246	4	250

**TABLE 5:** Using only frequencies.

Description of variables	Very poor	Poor	Neutral	Good	Very good	Total	Missing system	Total
Management's attitude towards change	7	20	56	122	44	249	1	250
Employee's attitude towards change	3	19	49	115	63	249	1	250
Support for teamwork and collaboration	6	4	37	131	71	249	1	250
Promoting participative decision-making	8	11	41	122	67	249	1	250
Investment in research and development (R&D)	7	7	43	94	98	249	1	250

**TABLE 6:** Using only frequencies.

Description of variables	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total	Missing system	Total
Promoting risk taking would encourage innovation	93	88	36	24	9	250	0	250
Being innovative leads to competitive advantage	101	111	15	16	7	250	0	250
Being innovative leads to increase market share	96	105	25	18	5	249	1	250
Innovative capabilities promote team spirit	97	110	21	12	9	249	1	250
Improving innovation processes increase productivity among staffs	95	111	20	17	7	250	0	250
Innovation allows for growth and profitability of educational institutions	90	111	24	19	5	249	1	250
Marketing innovation creates loyalty towards the institution's services	88	101	39	15	7	250	0	250
Technological innovation makes teaching and learning convenient	119	89	21	11	10	250	0	250
Less queueing times in terms of registration following innovation in services	106	105	19	13	7	250	0	250
Promoting innovation reduces the risk of employee resistance to change	98	100	35	11	6	250	0	250

### Analysis of the relationship between innovative capabilities and performance of University of Cape Coast Administration

From Table 6, concerning whether the promotion of risk taking would encourage innovation among workers, 93 respondents strongly agreed, 88 agreed, 36 were neutral, 24 disagreed and 9 strongly disagrees. This gives an indication that the administration needs to promote more risk taking among workers because the workers think if they are given this opportunity their innovative capabilities would be enhanced. With regard to the point that being innovative leads to competitive advantage, 101 respondents strongly agreed, 111 agreed, 15 were neutral, 16 disagreed and 7 strongly disagreed. This gives an impression that more workers think if the administration becomes innovative, it will lead to competitive advantage. Therefore, the administration should be more innovative in all its dealings. The researchers were able to deduce that when UCC administration adopts innovative ways, its market share is likely to increase because the analysis shows that 96 respondents strongly agreed, 105 agreed, 25 were neutral 18 disagreed and 5 strongly disagreed.

Another element investigated was that innovative capabilities promote team spirit, to which 97 respondents strongly agreed, 110 only agreed, 21 were neutral, 12 disagreed and 9 strongly disagreed. Therefore, it can be deduced that team spirit can really be boosted with the adoption of more innovations. As to whether improving innovation processes increases productivity among staff members, 95 respondents strongly agreed, 111 agreed, 20 were neutral, 17 disagreed and 7 strongly disagreed. This gives an indication that when management improves on processes to make them more innovative, productivity is likely to increase. Furthermore, 90 of the respondents strongly agreed that innovation allows for growth and profitability of educational institutions, 111 agreed with this statement, 24 were neutral, 19 disagreed and 5 strongly disagreed. It can therefore be concluded that there

is a direct relationship between innovation and profitability; therefore, management should act accordingly.

In analysing whether marketing innovation increases loyalty towards the institution's products and services, 88 respondents strongly agreed, 101 agreed, 39 were neutral, 15 disagreed and 7 strongly disagreed. This shows that creative marketing will surely improve loyalty of stakeholders towards the institution. In relation to whether technological innovation makes teaching and learning more convenient, 119 respondents strongly agreed, 89 agreed, 21 were neutral, 11 disagreed and 10 strongly disagreed. This means that technology makes teaching and learning more convenient as most of the respondents either strongly agreed or agreed. Moreover, as far as there would be less queueing during registration following innovation in services, 106 respondents strongly agreed with this statement, 105 agreed, 19 were neutral, 13 disagreed and 7 strongly disagreed. This indicates that improvement in the service process will reduce queueing time during registration exercises. Finally, from the data in Table 6, 98 respondents strongly agreed that promoting innovation reduces the risk of employee resistance to change, 100 agreed with this statement, 35 were neutral, 11 disagreed and 6 strongly disagreed. This shows that most of the staff members stated that when innovation is promoted in the organisation, they will not resist reforms or changes.

### Conclusion

To examine the relationship that exists between innovation and performance, certain indicators were used. Most of the respondents commented on these various indicators by strongly agreeing or just agreeing. A few of the respondents were either caught in the middle or did not agree, but their responses do not have a significant impact on the relationship. Therefore, it can be said that there is a positive or direct relationship between innovation capabilities and performance. This means that the more an organisation innovates the better it would perform, and the less it



innovates, the poorer its performance will be. It can be concluded that there has been some innovations in UCC as both management and staff members have testified to this fact. It should not be overlooked that product and process were significantly innovated over the last 3 years than market, collaboration and firm innovations. The study further discovered that when the organisation promotes innovation, there would be high team spirits, risk taking, productivity and low resistance to change. All these would make teaching and learning more convenient and lead to higher competitive advantage and market share through the boosting of performance.

## Recommendation

It is widely said that knowledge is not in the head of one person. It is of this view that the researchers of this study are making these recommendations which, if adopted and implemented by management in all educational sectors, will further boost innovative capabilities and performance as a whole. Firstly, all organisations, irrespective of their field, sector or industry have to understand that the environment in which they operate keeps on changing and therefore they have to keep on adapting in order to keep abreast with new trends. This will help them remain relevant and competitive in the ever-expanding industries so as to keep operating into the foreseeable future. Moreover, organisations have to educate their staff members on the need to keep on improving skill sets. Furthermore, organisations should listen to their stakeholders and conduct their operations in accordance with the requirements and preferences of these stakeholders. This will lead to loyalty on the part of the stakeholders to the organisation and subsequently bring about increased market shares and competitive advantage. Again, organisations should institute avenues that support idea generation and creativity so that staff members will feel free and confident to showcase their thinking and analytical abilities.

The research instrument used semi-structured questionnaires which provided room for respondents to provide certain information. This could be influenced by self-reporting of data. The study was also limited to only one institution, UCC, which could not be appropriate in generalising the findings. The researchers would therefore recommend that subsequent researchers should employ closed-ended questionnaires to collect data and also carry out the research in several institutions to provide a good basis for generalising the findings.

## Acknowledgements

### Competing interests

The authors declare that there are no competing interests.

### Authors' contributions

A.Y.A. wrote the introduction, part of the literature review and part of the methodology. R.I. wrote part of the methodology and also did the analysis. L.B. wrote part of the literature review, summary of the findings and the recommendations.

## Funding Information

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

## Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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