

Conceptualization of Absorptive Capacity Dimensions in Higher Education Institutions: A Qualitative View

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Abstract: The purpose of this paper is to explore the contextual meaning of Absorptive Capacity (ACAP) in the higher education institution (HEI) domain. The ACAP concept has been widely researched in the management of businesses. However, managing knowledge is crucial, not only in business organizations but also in the HEI which is a knowledge intensive domain. This is necessary as there is a need to bring out a clear understanding of the terminologies that are used to represent the dimensions of ACAP in academia in such a way that there are no ambiguities in their interpretations in research. This paper therefore empirically examines the conceptualization of dimensions of ACAP in order to bring coherence and clarity to the ACAP construct specifically in the HEI domain. This will broaden the knowledge-based view in terms of new knowledge creation or the addition of new knowledge to existing knowledge in the HEI domain. Employing the qualitative research design, ten (10) Heads of departments (HODs) of Business Schools in selected HEIs in the Greater Accra region of Ghana were the targeted participants selected using the purposive sampling technique in order to gather quality and reliable data. Semi-structured interviews were used to unearth in-depth information and understand the views of these faculty staff on the concept of ACAP and also to provide room for follow up questions leading to the discovery of emerging themes. Qualitative data were analyzed using the General Inductive approach to derive the contextual meaning of ACAP and its dimensions in the HEI domain. Empirical findings revealed three (3) core dimensions of ACAP as “Knowledge Search”, “Knowledge Accumulation” and “Process Transformation” within the HEI context. Innovations derived from the ACAP process in the HEI domain were found to be more beneficial to society as a whole than the ACAP process in the business domain. The compelling difference is that whilst ACAP in businesses benefits only the organization as a whole in terms of innovation performance, profitability and competitive advantage, the benefits of ACAP in academia are far more reaching as it benefits five categories of stakeholders as follows: transfers scholarly knowledge to benefit faculties, departments and the university as a whole, produces quality graduates for the job market, delivers reliable findings for industry practitioners, enhances individual academics’ research output, and boosts the image of the HEI for overall competitive advantage and sustained relevance in this knowledge economy.

Keywords: Absorptive Capacity, Knowledge Search, Knowledge Accumulation, Process Transformation, Higher Education Institution

1. Introduction

In spite of the abundant research on the ACAP concept, it still remains dominantly researched in the business industry. All these conceptualizations and dimensions that have been discussed have been explored in the organizational field.

However, this study focuses on empirically conceptualizing ACAP and its dimensions in the HEI perspective as a basic capability for learning, which is linked to achieving success in product innovation such as improved curricula, enhanced academic instruction and quality research output, as well as superior institutional performance [1-4]. This process is necessary in the HEI because the study needs to bring out a clear

understanding of the terminologies that are used to represent the dimensions of ACAP in academia in such a way that there are no ambiguities regarding their interpretations or even their measurements in the research. This will help to broaden the knowledge-based view in terms of the creation of new knowledge or the addition of new knowledge to existing knowledge specifically in the HEI domain. It will also help to develop common consensus among users, especially in the framing of meaningful concepts for developing theory in the HEI. We therefore explore the contextual meaning of ACAP and the perceived dimensions as they pertain in academia through a qualitative research design in order to bring coherence and clarity to the ACAP construct specifically in the HEI domain. This will facilitate theory development and theory refinements of the knowledge-based view as we use the absorptive capacity lens to explore knowledge acquisition, sharing and transfer for innovation in the university perspective.

2. Literature Review

The study of ACAP continues to be problematic despite its growing use due to the varying definitions, components, antecedents, outcomes and dimensions. Cohen & Levinthal (1990) referred to ACAP as a firm's "ability to identify, assimilate, and exploit knowledge from the environment" as part of its fundamental learning process [2, 5, 6]. The diversity of dimensions of the ACAP concept in the literature is precisely because of the realization that new external knowledge resources have become so essential [7-12]. Most of these reviews suggest that ACAP routines are made up of multiple process dimensions [2, 4, 13-15]. Lane et al. (2006), further propose a process definition comprising three dimensions: exploratory, transformative and exploitative stages of learning for ACAP. Lewin et al., (2011) also propose a more proactive perspective of ACAP, viewing it as a set of routines that surround the organization's ability to begin change from within, in addition to identifying and assimilating ideas from the external environment. Carlo et al. (2012) also conceptualize routines as a behavioural dimension of ACAP. Song et al. (2018) also develop the concept further by pointing to three separate dimensions which are absorptive effort, absorptive knowledge base, and absorptive process. Other scholars have clearly stayed away from defining the concept, while proposing various dimensions and perspectives [6, 9, 10, 14, 16]. No wonder that it is referred to as an umbrella concept [3] which does not provide much guidance to practitioners [17].

All these various dimensions, however, unanimously project the power of ACAP in converting externally gained knowledge into usable and profitable products and services. A look at these processes from a practice perspective shows that all these process dimensions are necessary and complement each other, as they function together to transform new, external knowledge into organizational innovation and performance [4, 13]. Again, none of these individual dimensions of ACAP can function very well without the other dimensions in tandem [4, 15]. Even so,

many empirical studies conceptualize ACAP as an overall construct e.g. [18-20] since the focus of research is on an organization's overall ability to absorb external knowledge.

Due to the richness of the ACAP concept many scholars have attempted to extend it in the organization field, as the basic capability for learning, which is linked to achieving success in organizational innovation and organizational performance [2-4]. This concept indicates that firms have diverse capabilities for absorbing knowledge and applying this knowledge in innovation processes [21]. Apart from its applicability to innovation [5], studies have considered its applicability to other areas such as inter-organizational alliance, collaboration and learning [6], entrepreneurship [22], supply chain management [23], marketing [24], and international business [25].

3. Methodology

There are several data collection techniques in qualitative surveys, common amongst them being interviews, participant observation, fieldwork, and archival research [26]. Interviews are generally preferred because of the richness of data that is gathered and the fact that it provides in-depth insight into the phenomenon being understudied [27]. Interviews are therefore effective for qualitative research as the resultant transcripts are reliable, producing rich textual data for qualitative analysis [28]. For this study, both telephone and face-to-face interviews were used, employing a semi-structured questionnaire format. This is because whilst some participants accepted to do the telephone interview (which would be recorded) others were not comfortable with the recording aspect and preferred a face-to-face interview so that notes would be taken. Both options are equally effective in practical terms, even though telephone interviews are faster and cheaper [29, 30], providing access to practically unreachable populations and affords a wider geographical coverage [31]. There are, however, some arguments against telephone interviews. For example, since the interviewer does not see the interviewee, it is not easy to collect data on non-verbal communication response which may come in the form of signs and body language [28]. This is an inherent shortcoming as the richness of data afforded by the interviewee's non-verbal response gestures is forfeited [32]. That notwithstanding, Novick (2008) argues that richness of data can be achieved with telephone interviews since interviewees are more relaxed as compared to face-to-face interviews and very likely to disclose sensitive information to the researcher [33]. Another handicap of telephone interviews is the issue of language and hearing problems among respondents [34]. In spite of these issues, the merits of both telephone and face-to-face interviews and their suitability for this study seemed to be the most appropriate option. Ten (10) Heads of departments (HODs) of Business Schools in the selected public and private universities in the Greater Accra region of Ghana were the targeted participants selected using the purposive sampling technique.

In qualitative research, sample size is not of the utmost importance [35-37]. What is important is giving attention to

the concept of saturation [38]. Saturation occurs when the qualitative sample experiences diminishing returns i.e., when further collection of data from more respondents does not essentially lead to the gathering of new information other than what has already been realized [39, 40]. There is therefore no fixed rule for sample size in qualitative research. Resorting to purposive sampling technique for this study was therefore helpful in choosing HODs who have the capacity to give detailed and rich responses due to their specialist knowledge [37, 41].

The sampling of ten Heads of departments (HODs) for this study is justified by Morse (1994) who recommends six to ten (6-10) participants when doing a qualitative study, in which case each person is interviewed at length to have a large amount data [40]. Again, Atran, Medin and Ross (2005) also posit that in some studies “as few as ten informants were needed to reliably establish a consensus [42].

Before embarking on the actual data collection for the qualitative interview, the semi-structured instrument was pre-tested to determine the appropriateness of the interview questions, establish the referential meaning of the individual questions, identify hidden biases in the wording and rectify other anomalies that could affect the quality of the data collected for the research [43]. The judgement and opinions of three (3) experts were sought from seasoned academics from the Business Schools of top universities [44, 45] in the greater Accra Region.

The semi-structured interview for this study consisted of several key questions that helped to define the areas to be explored, and also allowed the interviewer or respondent to delve deeper in order to pursue an idea or response in more detail. This interview format provided the participants with some guidance on what to talk about, which was helpful to participants. The flexibility of this interview approach, as compared to structured interviews, allowed for the discovery of emerging themes or elaboration of information that is important to participants but may not have previously been thought of as

pertinent or relevant by the interviewer. In line with Gillham (2000), verbal probes were used to further ask interviewees to expand upon their responses for clarification [46].

The selected heads of departments consented to participate in the interview and survey voluntarily and their anonymity was assured. Anonymity is defined as when the respondent cannot be linked to his or her responses even by the researcher [47] and no names of the respondents would appear anywhere in the final write-up of the study.

4. Analysis and Results

Out of the ten (10) sampled HODs eight (8) of them were interviewed upon reaching a point of saturation when further collection of data from more respondents did not lead to the gathering of new information other than what has already been realized. Out of the eight who participated in the interviews, three (3) of them agreed to be interviewed via a telephone engagement and have it recorded under strict terms of anonymity. The other five (5) participants, however, were strongly against being recorded despite the strict terms of anonymity. They would rather have a face-to-face interview, with the interviewer taking notes of their responses. In both cases the interviewer was required to resend the responses back to the participants to review and ascertain whether the responses they gave had been well captured or not, in particular, whether there were any omissions or commissions. They were also at liberty to make changes which they deemed fit to the transcribed responses. Again, out of the eight participants six (6) of them were males whilst two (2) of them were females. Further, out of the eight participants two (2) of them were from public universities whilst six (6) of them were from private universities. Finally, out of the eight participants one (1) of them was slightly experienced, two (2) of them were moderately experienced, whilst five (5) of them were highly experienced. Table 1 gives an overview of the participants' profile.

Table 1. Profile of Interview Participants.

CATEGORY	NUMBER OF PARTICIPANTS	PERCENT (%)
GENDER		
Male	6	75
Female	2	25
Total		100
INTERVIEW TYPE		
Telephone	3	37.5%
Face-to-face	5	62.5%
Total		100%
UNIVERSITY TYPE		
Public	2	25%
Private	6	75%
Total		100%
YEARS OF EXPERIENCE of HODs		
Slightly experienced	1	12.5%
Moderately experienced	2	25%
Highly experienced	5	62.5%
Total		100%

Source: Field Data (2020).

4.1. Data Analysis Technique

The Generic Inductive Approach allows the findings to emerge from the frequency and relevance of themes from the data without it being restrained by any tradition-specified qualitative approach [48] making it more flexible in theoretical support than other qualitative approaches. Its main aim is therefore to build up clear links between the research objectives and the research findings. In addition it ensures both the transparency and justification of the research design. Prior to the coding of the eight (8) interview transcripts for this study, a project journal was created in order to keep track of all activities and decisions made for the development of categories from coding into a framework that sums up the raw data to convey key themes and processes. It was also important to adopt the five (5) step strategy of the generic inductive analysis as suggested by Thomas (2006) [48]. These five steps are (1) initial reading of textual data; (2) identifying the specific parts of the text which are related to the objectives; (3) creating categories by labelling the parts of the textual data; (4) reducing overlaps and redundancies among the categories; and (5) creating a model by bringing together the most important categories.

The excerpts of responses gathered from the interview of eight (8) participants were coded using inductive techniques. The process of inductive coding began with cleaning the raw data files into a common format. This was followed by multiple readings and the interpretations of the text data from the interviews, in order to become familiar with the contents and also gain understanding of the themes, while considering all the multiple meanings that are in them [48]. The next was to develop or create categories from the text data into a framework. After the creation of categories, the text data from the responses of the eight participants were coded into their respective categories. This was done by defining the coding units and attaching them to relevant phrases, sentences and paragraphs from the interview texts [49]. Care was taken to identify and define the themes to create categories, eliminate redundant texts and reduce overlapping texts [48].

4.2. Discussion of Themes and Results

In relation to the phenomenon investigated: “What constitutes Absorptive Capacity in Higher Education Institutions (HEIs)?” The following themes mostly recurred in the interviews conducted with the eight (8) Heads of Departments (HODs) of selected Higher Education Institutions in Accra (see word frequency/cloud and model in figure 1).

[knowledge search, searching, scanning, search efforts, investments, absorptive search, prior knowledge, knowledge stock, information, ideas, valuable knowledge, useful knowledge, faculty, specialization, research & development, interdisciplinary, knowledge sharing, knowledge dissemination, knowledge acquisition, knowledge assimilation, implementation, collaborations,

knowledge, skills, social, technology, create ideas, develop new courses, new programs, improved courses, innovative services, virtual learning, patents, innovation generation, development, enhanced programs, quality graduates, job market]

In conducting the thematic content analysis, after data saturation was achieved, at which point no new codes were being returned from the data, three (3) core themes and thirty-two (32) sub-themes were identified and extracted. The three major themes relate to the main dimensions of absorptive capacity as far as the HEI context is concerned. These dimensions are (1) Knowledge Search; (2) Knowledge Accumulation and (3) Process Transformation. The next stage after identification of themes was to develop the general themes using colour coding [50]. This helped to distinctively differentiate the themes emerging within the data and also avoid coding interview extracts into the wrong nodes [51]. We subsequently reduced the overlaps and redundancies amongst these themes. Sub-themes were then developed for coding the information. Six (6) sub-themes were identified as emerging from the core theme, Knowledge search. Nine (9) sub-themes were identified as emerging from the core theme, Knowledge Accumulation. The third core theme, Process transformation had the highest number of seventeen (17) identified sub-themes emerging (see figure 2). All the themes and sub-themes were reviewed to check for relationships between themes and coded extracts. The themes were then labelled to generate clear definitions and names for the final analysis in relation to the research question “What constitutes Absorptive Capacity in the HEI?” Once selected for inclusion based on the existence of a relationship with coded extracts, the themes were reviewed and the variables of interest were also identified. The following two (2) interview excerpts summarize the contextual meaning of absorptive capacity in the HEI as given by two Heads of departments (HODs):

[...] Absorptive capacity in a university for me refers to our proactive efforts at searching for valuable external information, acquiring them, and then combining such knowledge with our existing knowledge to improve outcomes of our academic operations, such as programs, courses, program combination and research output. The process of absorptive capacity can contribute to the university's innovation performance by operating as a strategic tool which will process useful knowledge from the external environment into innovative products and services for our cherished clients and stakeholders. (Participant 8).

[...] in the context of the higher education industry, I think that absorptive capacity is the ability of the institution to search and identify information that is relevant for improving or developing their products and services, acquire that information and use it for their development. For higher education institutions, the main aim is to train people, award certificates and do research. So whatever information that the institution will need for its growth and

development will centre on these three main goals: the ability to get students trained for them to be awarded certificates and do relevant research to impact society. (Participant 5).



Figure 1. Word/Frequency Cloud and model.

4.2.1. Knowledge Search

Knowledge search represents the first phase or dimension of absorptive capacity in the HEI. Information is the bane of development as today's economy is largely based on new information. New knowledge is therefore essential for innovation. In this regard, university workers, in particular, the R&D unit and public relations staff must always be quick and proactive to scan the external environment to identify new ideas, trends and fresh opportunities to be acquired and integrated with already existing capabilities of the institution in order to succeed in the generation of new products and services. They must also act as change agents as they identify and acquire new technologies and new product applications and combinations. Such new information can be gathered from sister universities and other stakeholders such as governing and accrediting authorities, clients, suppliers and even competitors. HEI managers must show commitment to investing efforts in the search for valuable new knowledge if they want their educational facilities to remain relevant in the face of stiff competition in this fast paced knowledge economy. As leaders, they must be able to stimulate and encourage creativity in their followers. Further, managers must be able to challenge assumptions and take risks with both faculty and administrative staff and must not be afraid to solicit ideas from them. This will encourage staff to put on their thinking caps when problems arise. By so doing managers will be able to develop trust among staff by giving them decision making opportunities and autonomy in performing their respective job roles in order to promote their ability to constantly search for new ideas and creative ways to acquire knowledge for innovation. Individual academic

staff must also be proactive and committed to the agenda for continuous change as they collaborate with their colleagues both internally and externally to enhance their intellectual capacity for knowledge acquisition in order to improve their teaching methods and research output.

4.2.2. Knowledge Accumulation

Knowledge accumulation represents the second phase or dimension of ACAP in the HEI. It refers to the stock of knowledge that has been stored already by the institution. The stock of knowledge, referred to as 'prior knowledge' helps the institution to understand the usefulness of external new knowledge and acquire it. Prior knowledge is recombined with the newly gained knowledge and transformed together for the purposes of solving problems and creating new curricula and programs. As has been established by Cohen and Levinthal (1990) and Zahra and George (2002) the ACAP of an organization is dependent on its prior knowledge which helps to better understand new knowledge whilst improving the stock of knowledge [4, 5, 52]. This means that the absorptive knowledge accumulation of a higher education institution must be built on foundations that are past oriented and path dependent, and require that new external acquired knowledge is related in order to facilitate easy comprehension and a smooth transformation process. Prior knowledge is very important as learning is associative [53], because it helps to link the new knowledge with the existing one. Gagne's (1962) theory of hierarchical learning argued that an individual who has existing knowledge can easily acquire related new knowledge. Knowledge stocks accumulated by the HEI could be in the form of patents and intellectual properties [54], patent citations [55], scientific publications [56] and prior product innovations [57]. Understanding newly acquired ideas facilitates easy transformation and exploitation of such new knowledge with the prior existing knowledge for the development and enhancement of products and services whilst augmenting the stock of knowledge. All respondents unanimously agreed that their universities have a system or mechanism in place for internal usage storage of newly acquired knowledge for future reference. The following excerpts are from two respondents on the question: "Does your university have a system or mechanism in place for storing new knowledge for future reference?"

[...] Sure we do. Apart from our general university library, we also have faculty and departmental libraries. Our professors and other specialized academics may have their own way of storing new knowledge which can be shared for future use or to deliver to their students, colleagues and industry practitioners. (Participant 4).

[...] Yes we do have university libraries and the various faculties and departments also have repositories for storing their unique knowledge. Individual academics also have their own database for storing knowledge which they deliver to their students. (Participant 1).

Further, respondents unanimously agreed that ideas and concepts are easily transmitted across faculties and

departments for usage and storage in their universities. Effective communication is the key to knowledge accumulation. Knowledge can also be transferred through collaborative training and development, coaching and mentoring across faculties and departments in the academic environment to augment the knowledge stock. The following excerpts are from two respondents on the question: “Are ideas and concepts easily transmitted across faculties and departments for usage and storage?”

[...] We organize conferences, seminars, and colloquia across faculties, departments and units in a university, in order to share knowledge. This is because ideas or information from one faculty or department can provide input to another, which can yield innovative outcomes so long as effective collaborative exchanges are made between these faculties and departments through training and development. (Participant 7).

[...] We have a system in place whereby training programs are organized for information sharing across all units of the university. We also have frequent conferences, workshops and colloquia to share information at the faculty level. Any other information is also transmitted through staff durbars and seminars. (Participant 6).

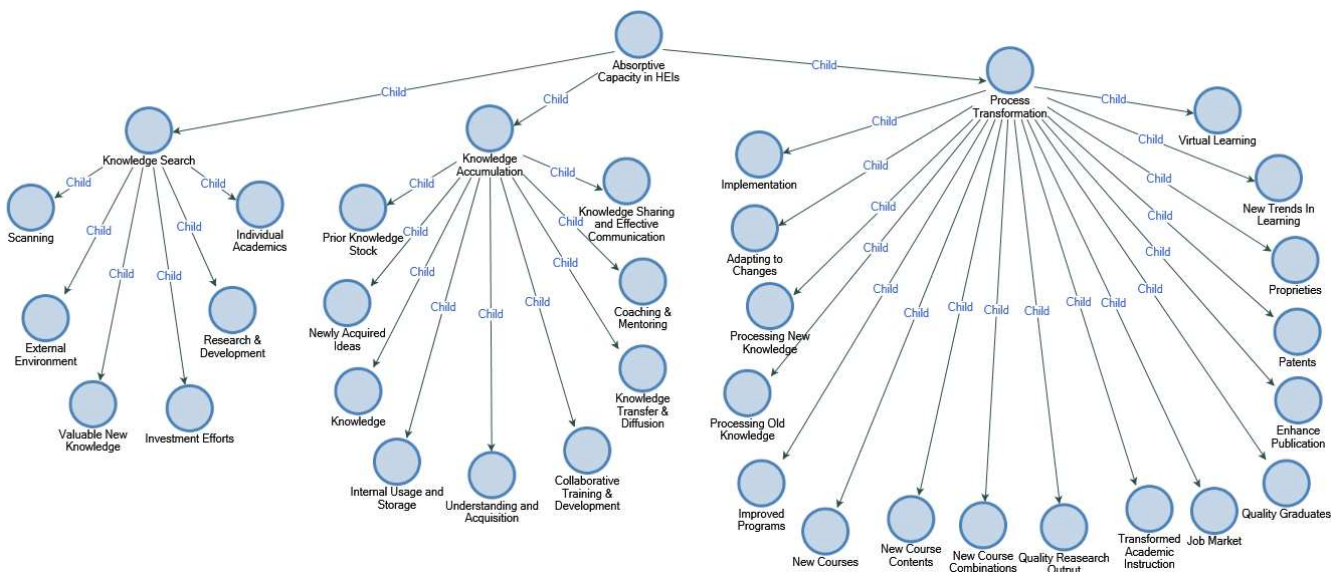
4.2.3. Process Transformation

Process transformation refers to the efforts made by the institution to put in place its own internal procedures and processes and structures to enable the sharing, dissemination and diffusion of newly acquired external knowledge internally at all levels, faculties or departments of the HEI. Equally important is the implementation of improved Information Technology (IT) systems for networking to help create opportunities for knowledge management in the academic environment. Managers of HEIs therefore need to invest in advanced technological

infrastructure towards the acquisition of knowledge and this will be highly beneficial in achieving success at improving and renewing curricula and program content and relevance. They also need to create community-based learning and inter-disciplinary research and teaching and also implement structures and networks to reward people for supporting collaborations [58]. Absorptive process transformation requires more interactive institutional practices like socialization and inter-functional collaboration to share knowledge holistically. Consequently, relevant knowledge will be distributed or transmitted to every faculty, department or unit within the university [59, 60]. Absorptive process transformation also facilitates the storing and retrieval of knowledge holistically for the institution so that old and new knowledge can be processed into new courses, new course combinations and contents.

In today's increasingly information-dependent world, knowledge has become a powerful resource. It is therefore necessary for managers to put in place technologically advanced procedures and processes for the diffusion of newly acquired external knowledge internally at all levels, faculties or departments of the HEI. This will help the various faculties and departments of the university to adopt new and improved trends in the higher education industry, for example, enhanced academic instruction, virtual learning, quality research output, quality programs and courses to produce better graduates who are suitable for this competitive global knowledge economy and job market.

Figure 2 shows the thematic map of the three (3) major themes as well as the thirty-two (32) sub-themes that were identified and extracted from the content analysis. Table 2 presents excerpts of the responses given by participants in relation to the emerging dimensions and phases of the absorptive capacity process in HEIs.



Source: Field Data (2020)

Figure 2. Project Map of 3 key themes and 32 sub-themes of ACAP in HEIs.

Table 2. Excerpts of interview responses from HODs.

QUESTION	PARTICIPANT	EXCERPTS OF RESPONSES
Question 8: What in your opinion would be the components, dimensions or phases of the Absorptive capacity process as far the HEI is concerned?	HOD 1	<p>[...] "1. Knowledge Search. The university is able to search for relevant information and knowledge by looking beyond its scope to identify knowledge which is deemed valuable and useful to them."</p> <p>"2. Knowledge Accumulation. Steps are taken by the university to acquire this knowledge to boost its prior knowledge stock for future usage by both faculty and administration within the internal system of the university"</p> <p>"3. Knowledge Productions. Managing the knowledge by putting in place structures to suit its internal implementation to bring about improved changes in the delivery of taught courses through improved IT applications for enhanced programs".</p>
	HOD 2	<p>[...] "The first action is to search for external new knowledge and acquire it. I would call this dimension "External Knowledge Search". Secondly this knowledge is diffused to members of staff through communication and training. I would call this dimension "Knowledge Acquisition". Finally, this new knowledge is added to existing knowledge to create and improve courses, programs and research work in order to constantly attract more students. I would call this dimension "Knowledge Creation or Inventions".</p> <p>[...] "In my opinion there are basically three dimensions or phases of absorptive capacity which are: Knowledge Search. This refers to the efforts of the university in scanning the external environment in search of valuable new knowledge.</p>
	HOD 3	<p>Knowledge Acquisition and Accumulation. This refers to acquiring the knowledge and disseminating it throughout the university community for all to access and absorb.</p> <p>Product Enhancement. This refers to the innovation phase of adding the new knowledge to the existing knowledge to implement new and improved courses and programs in order to constantly produce rich and knowledgeable graduates and attract more students in the face of stiff competition among many universities within the industry."</p>
	HOD 4	<p>[...] "1. We search for new ideas, new technologies, new information and knowledge by scanning the external environment critically through dedicated efforts. This dimension would be called "Knowledge Search phase".</p> <p>2. We try to acquire the useful, valuable and relevant ones to add to our prior stock and disseminate them throughout the university. I would call this dimension "the Acquisition phase".</p> <p>3. We try to put in place technological systems and structures that will facilitate the implementation of new and improved courses and programs for our students so that we can successfully attract more students as the competition is now very tough. There are so many universities now so we try to maintain high standards. I would call this dimension "The Process and Innovation phase".</p> <p>4. Management encourages a deep sense of collaboration and communication during the process of implementation of enhanced products and services for our stakeholders. I would call this dimension the "Management Support phase".</p>
	HOD 5	<p>[...] "The dimensions of Absorptive capacity in my opinion are:</p> <p>1. Knowledge Search. Ability of the university to search for relevant information and knowledge by looking around to identify knowledge which is needed or deemed valuable.</p> <p>2. Acquisition. Steps for the university to acquire this knowledge into the internal system of the university by processing of the external knowledge for internal usage.</p> <p>3. Process Innovations. Managing the new and existing knowledge to implement innovative products and changing technological trends."</p>
	HOD 6	<p>[...] "The initial step is the ability of the university to search for relevant information and knowledge by looking around to identify knowledge which is relevant or deemed valuable. It must be noted that this knowledge has to be consistent or compatible with the old knowledge that we already have. If the new knowledge is not compatible with the existing knowledge that we have it will be difficult for us to understand so there must be a relationship between old and new knowledge before we acquire it. Finally we must try to manage the new and existing knowledge to implement innovative products and changing trends in our academic activities and operations. The three keys steps are therefore to search for new knowledge and acquire it, combine old and new knowledge, use them to innovate new programs, curricula in order to produce knowledgeable graduates for the competitive job market."</p>
	HOD 7	<p>[...] "I would propose a three step dimension for absorptive Capacity which are:</p> <p>1. Absorptive Knowledge Search. Searching for relevant information and knowledge by looking around our external environment to identify knowledge which is relevant or valuable for our operations.</p> <p>2. Absorptive Knowledge Acquisition and Accumulation. Attempts made by the university to acquire this knowledge and internalise it to add up to our existing stock of knowledge for usage and storage for future processes.</p> <p>3. Absorptive Creation Process. Combining the new and old knowledge to implement creative and novel programs that will attract more students for us to remain competitive."</p>
	HOD8	<p>[...] "To the best of my knowledge, there are four phases of the absorptive capacity process:</p> <p>1. Knowledge Search. This is the stage where the university makes efforts to scan the external environment in search of valuable new knowledge which is relevant to our operations.</p> <p>2. Knowledge Accumulation. At this stage the recognised knowledge is acquired and added the university's existing knowledge for storage and usage.</p> <p>3. Knowledge assimilation. This knowledge is diffused throughout the university community using interactive technological systems for all to access and absorb.</p> <p>4. Innovation Process. At this phase the new knowledge is added to the existing knowledge to implement new and improved courses and programs for our students, and subsequently attract more students every year to sustain our competitive edge among many universities within our industry."</p>

Source: Field Data (2020).

4.3. Findings

The study sought to find out if Absorptive Capacity has a different meaning, functions, components or dimensions in the HEI context and also to provide an in-depth understanding of the effects of Absorptive Capacity in the HEI domain for generating innovations. The concepts and themes that were derived from the raw data of the eight (8) interview participants showed an amazing and surprisingly consistent pattern of the interpretation of insights, ideas, components or dimensions of ACAP that emphasized the dominant logic and consensus of elements in the contextual meaning of ACAP in the HEI domain. ACAP in HEIs has three functions or dimensions which is translated into a three phase process of:

1. *Knowledge Search Stage*: - This is done by scanning the external environment in search for valuable new knowledge through investment efforts made by both the research and development (R&D) department and individual academics of the university.
2. *Knowledge Accumulation Stage*: - Augmenting the prior knowledge stock with these newly acquired ideas, knowledge, information for internal usage and storage. These new external additions must be related in a way to the existing knowledge for easy understanding and acquisition by faculty staff through collaborative training and development, coaching and mentoring, knowledge sharing and effective communication.
3. *Process Transformation Stage*: - Implementation stage of adapting to changes in daily operations i.e. processing new and old knowledge for the rolling out of innovative, improved programs, new course contents, new course combinations, transformed academic instruction, leading to the production of quality graduates for the job market, quality research output, patents, proprieties, and enhanced publication of research work and new trends in learning such as virtual learning.

5. Implications & Conclusion

By employing the generic inductive approach which is interpretive, subjective and inductive, we were finally able to achieve the objective of this study: "What constitutes Absorptive Capacity in the HEI domain?" Based on the first and second order codes, the emergent dominant concepts and significant themes reveal the contextual comprehension of ACAP in academia as not too far removed from that of industry, in spite of the cultural and institutional differences between the two domains. The compelling difference however is that whilst ACAP in industry benefits only the organization as a whole in terms of innovation performance, profitability and competitive advantage, the benefits of ACAP in academia are far more reaching as it benefits five categories of stakeholders as follows:

1. *The holistic university* - HEIs are in the business of creating

knowledge through research. They also share and transfer knowledge through the act of teaching and learning, consultancies and training programs [61, 62]. The quality of academics in a given institution reflects the richness of that institution in terms of its overall research/publication level or standards. Although academic knowledge is often proprietary because of the credit that may be gained by the individual academic, every university would like to boast of the highly qualified, skilled or specialized faculty staff it possesses to boost its image.

2. *Individual academics* - HEIs place a high premium on evidence of individual scholarly achievement in research publication and scholarship [63]. It is for this reason that academics place a high value on their individual scholarly achievement rather than on the overall goal achievement of the institution [64]. Most academics focus on their self-preservation instincts and are not willing to share knowledge which they deem so valuable that it cannot be parted with so easily, especially when they have specialized competences [65-67]. HEIs therefore need to create incentives for recognizing the contributions of academics in the creation and sharing of knowledge [62].
3. *Students* - The knowledge of academics is seen as a vital resource and an asset for HEIs because they create knowledge by doing research and disseminate knowledge to students by teaching them and transforming them into quality graduates for the job market [61].
4. *Interdisciplinary Schools or Faculties* - Acquiring relevant knowledge helps the various faculties and departments of the university to improve their internal operations by adapting new and improved trends in the HEI, for example, improved curricula and course combinations, enhanced academic instruction, virtual learning, quality research output and better graduates who are suitable for this competitive global knowledge economy and job market.
5. *Industry* - HEIs can also strengthen the business industry by producing highly skilled graduates, stronger business networks and excellent research output that can be practically applied in the business and commercial industry for enhanced innovative performance, competitive edge and profitability [68]. Universities are also a main source of creative technologies and knowledge that is critical to achieving cutting-edge organizational innovation. According to Cohen and Levinthal (1990) the knowledge acquired from universities is unique and different from the knowledge that is acquired from other sources such as customers, suppliers and competitors [5].

6. Limitations and Recommendations for Future Research

Despite the many advantages of the qualitative design

adopted for this study, there are limitations. It is a time-consuming research approach [36] that had to be implemented under a limited time frame and difficult circumstances of the COVID 19 pandemic which impacted on the interview stage of the study. It was very difficult getting the selected heads of departments (HODs) to confirm interview dates which had to be rescheduled several times due to the partial lockdown that had to be enforced to contain the spread of the corona virus. The HODs who participated were very kind and considerate and we will be forever grateful to them for taking the risk to avail themselves for the interviews especially the face-to-face interviews, under the strict observation of the COVID 19 protocols.

This study also offers some directions for future research. Out of the eight participants who gave responses one HOD gave a fourth dimension of ACAP which he termed the “*Management Support phase*” where management encourages a deep sense of collaboration and communication during the process of implementation of enhanced products and services for our stakeholders. Future researchers could therefore consider “openness in communication” in the ACAP process for the HEI domain.

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