Role of Openness in Communication in the Absorptive Capacity and Innovation Generation Link in Higher Education Institutions

Mercy Asaa Asiedu[1], Jesse Kwaku Doe[2]

[1]Department of Management, Graduate School of Management, Abidjan, Ivory Coast

[2]College of Health Sciences, University of Ghana, Accra, Ghana

Email address:

akusid@yahoo.com (Mercy Asaa Asiedu), jessekdoe@gmail.com (Jesse Kwaku Doe)

Abstract: This paper examines the role that Openness in Communication (OPCOM) plays in the acquisition and exploitation of new knowledge across faculties and departments of the higher education institution (HEI) community for Innovation Generation (INNG). Using the survey research design, data was collected from 282 lecturers purposively selected from the Business Schools of 20 HEIs in the Greater Accra region of Ghana. In testing the hypotheses proposed for the study, the data were analyzed using the Smart Partial Least Squares approach to structural equation modelling. The results revealed that OPCOM is important for the acquisition, sharing and transfer of knowledge in HEIs and has a mediation effect between knowledge acquisition and the generation of innovations. Even though the academic community is typically individualistic, mutual interest between academics can be stimulated if various platforms and open communication forums are established for the exchange and sharing of ideas, knowledge and opinions. HEIs need to invest resources and efforts at building strong relationships that facilitate collaboration, trust and interactions among varying faculties, departments and units. This will facilitate the easy sharing new knowledge to help innovate new products such as improved curricula, enhanced academic instruction and quality research output for the university to sustain their relevance and competitive advantage.

Keywords: Absorptive Capacity, Knowledge Acquisition, Openness in Communication, Innovation Generation, Higher Education Institution

1. Introduction

1.1. Background

Acquiring new knowledge is the bedrock for sustaining development as it often enhances decision making which leads to innovation, competitive edge and economic growth. The Absorptive Capacity (ACAP) concept which was propounded by Cohen and Levinthal (1990) has been widely researched because of the fact that external knowledge resources are seen to be essential [1-3]. The richness of the ACAP concept has compelled many scholars to extend it in the organization field, as the basic capability for learning which facilitates the achievement of success in product innovation and superior organizational performance [4-6]. The concept indicates that organizations have diverse capabilities for absorbing and applying knowledge in innovation processes [7].

As such, there has been many attempts by scholars to review, redefine and clarify ACAP [4, 6, 8, 9]. All these ACAP theories unanimously agree that an organization's absorptive capacity builds upon its prior knowledge or the totality of its individual members' absorptive capacities. This prior knowledge helps the organization to understand the usefulness of new knowledge to enable them to recombine and transform them together to suit its purposes such as finding new ways to solve problems. Since an organization's ACAP depends on the absorptive capacities of the individual members [4], it is necessary that collaborative efforts are made to ensure a culture of openness in communication to facilitate the diffusion of knowledge holistically.

Openness in communication (OPCOM) dates back to the

early human relations movement in the 1940s when researchers from Harvard University saw open communication as a mechanism to bring together managers and their employees in Mayo's (1945) idea of nondirective interviewing [10]. The belief was that if employees were persuaded to disclose how they feel about their jobs and supervisors, their level of stress would be reduced so that management could tap into their source of motivation. Again, increased interactions between workers and management were believed to make employees more committed to organizational goals and this would enhance morale and productivity. They therefore saw the need for more frequent downward dialogue from managers to employees for a better integration and also encouraged an upward communication from employees to managers to facilitate disclosure. An advocate for human relations emphasized that managers and employees have a "mutual" responsibility to create "supportive relationships" by way of open communication [11]. This inspired research on OPCOM, as one in which both parties saw each other as a receptive and willing listener who would avoid negative responses [12, 13]. This perspective would portray an acceptable managerial atmosphere of supportiveness, trust and participation, which is achieved through "candid disclosure of feelings" [12]. OPCOM also encompasses the possible use of different channels to communicate information depending on the circumstances, thereby, heightening flexibility in communication. It is therefore linked to organizational success because it is believed to eliminate crises at the workplace [14]. OPCOM describes a situation in an organization where there is an open, honest and transparent communication among colleagues to promote and ensure trust and confidence by doing away with secrecy and bureaucracy [14-16] and is a crucial element in the sharing and transfer of knowledge [17] in a knowledge intensive domain, such as the higher education institution (HEI) whose core business is the creation and dissemination of knowledge through lectures, conferences, pedagogic workshops, learning and scholarly research [18]. Drawing from the literature, we define OPCOM as the freedom to express oneself openly in disclosing information in the workplace. One distinct characteristic of OPCOM is transparency of internal communication [15] which has received much prominence in the strategic communication literature [19]. Transparency, which is the opposite of secrecy is characterized by openness [20]. Transparency is made up of three elements which are informational, participatory, and accountability. Although these three elements work together, they are analytically distinct [21]. Informational transparency requires the disclosure of "truthful, substantial, and useful information" [22]. In Participatory transparency, the organization makes an effort to involve all employees in the identification of the most relevant information that meets their informational needs. In accountability transparency the organization includes both positive and negative information. Revealing both sides of a story prevents any manipulation of employees' perceptions and interpretations of organizational actions. An organization that values accountability would disclose both benefits and threats when communicating change

initiatives in order to avoid anxiety, misunderstanding, and distrust, uncertainty and insecurity [23]. In fact extant literature on communication found that transparent communication induces employee-organization relationships [15], enhances organizational trust [19, 22] and increases the perception of corporate reputation [24].

Although the academic community is typically individualistic and independent, [18, 25] mutual interest between academics can be stimulated through open communication forums for the exchange and sharing of ideas, knowledge and opinions. For the sake of self-preservation, academics are usually not willing to share knowledge which they deem too valuable to be shared for free. However, OPCOM can help to develop and maintain excellent and transparent relations among work mates in order to ensure a harmonious and trustworthy atmosphere [26]. When faculty members are made aware of the benefits of knowledge sharing, such collaborative efforts of mutual trust will enhance their effectiveness and also contribute to generating organizational capabilities that are key to an HEI's performance [27]. This paper therefore analyses the effects that OPCOM has on knowledge acquisition and innovation generation in the whole ACAP process, specifically in the HEI perspective and contends that the ACAP process can never be complete unless we consider the mediating role that openness in communication plays in linking the acquisition of knowledge to the generation of innovations in HEIs.

1.2. Theoretical Perspective

This study anchored on the theory of organizational knowledge creation [28-31] which views knowledge creation as an ongoing social accomplishment which takes place through continuous dialogues, interactions and socialization. This theory is founded on the premise that organizational knowledge is developed through the conversion of tacit and explicit learning in four ways of associations, which are socialization, combination, internalization, and externalization [28]. As a result of this dynamism, workmates grow together as they create knowledge, and this process of interaction within the organization makes them go beyond their individual boundaries, resulting in 'change' of oneself, others and the organization as a whole. Knowledge is discovered by an individual, shared among organizational members and finally incorporated into the organizational knowledge system [32, 33] through the process known as "organizational learning" [32-34].

The theory of Social Penetration forms the basis of OPCOM for this paper. Social Penetration theory explains interpersonal relationships [35] and how these relationships change over time. As people become more trusting of one another, they reveal things about themselves little by little. This theory aligns self-disclosure processes with the dynamics of reinforcement. When an individual's interaction with another yields positive reinforcements he or she begins to gradually reveal or disclose information about himself or herself [35]. As both parties feel good about their relationship the process gets even more enhanced and they are both able

to establish trustworthy, open and genuine relationships. This results in a greater desire to reveal or disclose more information even about one's individual core personality. Thus, the social penetration theory is sometimes referred to as the "onion theory" of personality since the "layers" of individual personalities and intimacy grows deeper with time [36]. In terms of the situational context, the general notion it that in the early stages of association, people penetrate very fast but slow down after a while when they are not sure they wish to share their core values that easily except with people in whom they believe they will yield positive outcomes after having developed longer term associations. The expectations that people have about the future of their association plays a key role in social penetration theory. Especially if they sense any negative values regarding relationships they will not freely disclose their core values.

2. Literature Review and Hypotheses Development

New knowledge acquisition has become a key strategic resource for innovation [3, 37, 38]. In the value creation process, innovation is dependent on individual employees' experiences, skills and knowledge [39]. Empirical findings from the study of Asiedu and Doe (2022), which conceptualized the dimensions of the ACAP construct specifically in the HEI context, for clarity and coherence, revealed three (3) core dimensions of ACAP as "Knowledge Search", "Knowledge Accumulation" and "Process Transformation" [40]. Absorptive knowledge search in HEIs refers to the continuous attempts at creating more knowledge. This entails the university's efforts to primarily search for knowledge by scanning the environment to identify knowledge which is deemed valuable, so that it can be acquired for commercialization and profitability [3, 40, 41]. HEIs who do not see such activities as expenses but rather see them as investments are more likely to gain resource for institutional growth and success [27, 42]. These investments are dependent not only on financial resources but also on human resources [8] for research and development (R&D) with an element of "intensity of effort" [3]. Acquisition is usually determined by how fast and intense the HEI's efforts are to identify and finally get knowledge [6]. The knowledge search of the HEI is forward looking [3] as it enables the institution to act as a radar to proactively detect and get valuable, accessible and relevant external knowledge. Absorptive knowledge accumulation in HEIs refers to the stock of knowledge that has been accumulated already by the university [40]. This prior knowledge makes it easy to understand the usefulness of new knowledge to enable it recombine and transform them together to suit its purposes such as finding new ways to solve problems or create new curricula. As argued by Cohen and Levinthal, (1990), the absorptive capacity of an organization is dependent on its prior knowledge which helps to better understand new knowledge [3]. Gagne, (1962)'s theory of hierarchical learning argues that an individual who has existing

knowledge can easily acquire related new knowledge [43]. Knowledge stocks in HEIs are in the form of intellectual properties, patents, scientific publications and prior product innovations [44]. Understanding new external knowledge makes it easy to transform and exploit them by functioning as a "processor" [2, 6, 8]. According to Gagne (1962) learning is associative, therefore when an individual has existing knowledge, he can easily acquire related new knowledge [43]. Again, existing knowledge possesses lower-order capabilities that enable an individual to gain higher-order capabilities which are embedded in the new knowledge. The absorptive process transformation refers to the implementation of internal procedures, processes and structures to enable the sharing and diffusion of external knowledge internally at all levels, faculties or departments in HEIs [40]. This is contingent on the establishment of knowledge-sharing procedures and processes to diffuse knowledge across the various linkages between individual capabilities and expertise through a process of knowledge integration [42, 45], or the "transmitter" process [2, 3, 8]. By so doing, the knowledge held by individuals can be shared and integrated through teams to become organizational [32-34]. It is equally important for HEIs to invest in the establishment of improved technological infrastructure for IT systems to help create networking opportunities in the academic environment. This will be highly beneficial in achieving success at improving curricula content and relevance. It is important to also create community-based learning and inter-disciplinary research and also implement structures to reward people for supporting collaborations [46, 47]. Absorptive process transformation makes learning more interactive because institutional practices like socialization and openness in communication are required to share knowledge and its various applications [48]. Openness in the disclosure of information is also important and emphasized as part of corporate social responsibility in some organizational settings as such transparent communication ensures that other parties also participate [49]. As a result of this dynamism, employees grow together as they create knowledge. This process of interaction within the HEI will make faculties and departments go beyond their diverse boundaries to collaborate, resulting in 'change' of oneself, others and the institution as a whole [46]. It will therefore promote the transmission of relevant knowledge from units to departments, faculties and finally throughout the whole university community, venturing into the process of organizational learning within the HEI [50]. We therefore hypothesizes that:

H1: Absorptive Capacity in the HEI is positively related to its knowledge acquisition.

Knowledge Acquisition (KA) simply refers to the activities that an organization engages in to facilitate the identification and acquisition of new scientific, general, organizational or technological knowledge that is essential for its operations [3, 4, 6, 41, 51, 52]. Members of an organization are required to recognize how valuable new external knowledge is, acquire it, and incorporate it into the organization's existing knowledge stock [3]. Acquisition is determined by how fast and intense an organization's efforts

are to identify and finally get knowledge [6]. The major components that facilitate acquisition are therefore prior knowledge and investments, speed, intensity and focus. This potential for knowledge acquisition is a strength for organizations which manage to access and absorb valuable knowledge by having a relationship with other firms through social interaction [53]. Adapting to skills and capabilities from partner firms through knowledge transfer can enhance their innovative activities to create competitive success [54, 55]. Knowledge acquisition therefore plays a key role in knowledge search, social networking and the quality and speed of learning.

Two types of knowledge which can be acquired are tacit knowledge and explicit knowledge [29, 45]. Tacit knowledge refers to knowledge that is invisible, hard to document, visualize or share with others because it resides in an individual's mental faculty. It is shared through common experiential encounters in routine practices and actions [51, 56]. It is therefore an essential ingredient for gaining a competitive advantage because it is hard for competitors to copy. It is also the reason some organizations are able to churn out more innovative products than others. Organizations that want a competitive advantage and sustain it must therefore try to enhance their tacit knowledge acquisition [32], by creating and sharing through direct and personal interaction, as it is rooted in people's intellectual capabilities. Explicit knowledge, however, is visible, easy to codify and articulate, and can be made easily available and shared to organizations and their members through conceptual symbols, images and language in a systematic way [56, 57]. Since it is easily documented and readable, it can be handed down even to future employees.

This potential for knowledge acquisition is a strength for HEIs who manage to access and absorb valuable knowledge by having a relationship with other institutions through social interaction [53]. Adapting to skills and capabilities from partner institutions through knowledge transfer can enhance their innovative activities to create competitive success [54]. Knowledge acquisition therefore plays a key role with regards to searching, social networking and the quality and speed of learning. Internal knowledge acquisition is also facilitated through the existence of connections and relationships among different departmental units or functions [58] whose employees show willingness to share or exchange knowledge and ideas, based on mutual trust. Internal knowledge acquisition also promotes the flow of knowledge within the institution which enhances cooperation and coordination among staff members and helps the process of integrating external knowledge into the institution [59]. Because knowledge resides within individuals, it is important to share for all organizational members to acquire in order to establish new routines for solving problems [31].

Innovation Generation means using new knowledge to either develop new products or improve old products and services as a commercial output of ACAP [4]. In this regard, innovation generation reflects the effect of absorptive capacity in creating value for the organization. The ability of an organization to successfully internalize the external knowledge acquired into its operations naturally spurs innovation to enhance its innovative and organizational performance [27, 37]. For this reason innovation is largely regarded as highly essential and critical to the growth, success, survival and sustainability of any organization. This means that innovation must be an ongoing activity for economic and social prosperity. Innovation is therefore not sorely an internal affair so HEIs need to be aware of their clients' current economic trends, current research and external ideas. HEIs also require varying human capital skills for the improvement and sustenance of their performance to withstand the external threats to constantly innovate, now that global competition is soaring in the midst of increased on-line technology and diverse demographics of students [50]. HEIs must therefore build capacities that will enable them respond to the rapidly changing demands of the external environment by constantly searching for and acquiring new knowledge. This will facilitate the transformation and diffusion of new knowledge within faculties and departments for the churning out of innovative program combinations and enhanced research output. We therefore hypothesize that:

H2: Knowledge acquisition in the HEIs is positively related to its innovation generation.

Even though the absorptive search of any organization is forward looking [3] as it enables the organization to act as a radar to proactively detect and get valuable, accessible and relevant external knowledge, its success will greatly depend on how well members are openly communicated to. As discussed earlier communication is not only useful for getting messages across, but it is also a key mechanism which can create and also maintain positive work relationships which are based on trust, confidence and harmony among members of staff and stakeholders [15, 16]. The involvement of academics in research collaboration and the capacity of collaboration to drive research and innovation are all contingent on the existence of an enabling environment that includes structures, systems and incentives that support research collaboration [47]. Both academic and administrative staff need to collaborate in contact meetings and be willing to set aside their separate departmental interests so that the absorptive process of learning can take place interactively as they share disparate ideas, knowledge and opinions. This will encourage the building of collaborative intentions that will eventually be translated into action [60]. As Schomaker and Zaheer (2014) clearly emphasized, knowledge transfer is contingent on a good and reliable communication process between the sender and receiver [61]. Openness in communication will therefore facilitate shared values and common commitments to holistic organizational goals by enabling faculty and administrative staff of HEIs to forge ahead in maintaining and sustaining positive and productive relationships [62], so that they can collectively put in their "intense effort" which is critical [3] for proactively detecting and acquiring the needed knowledge as a key resource. Again, OPCOM, which is a crucial element in knowledge-sharing and transfer [17], will

create relationships of mutual trust that will stimulate a harmonious flow of information from the knowledge owner to the recipient to facilitate the innovative drive of the institution as a whole. We therefore hypothesize that:

H3: Openness in communication in the HEI is positively related to its innovation generation.

2.1. Mediating Role of Openness in Communication

From the organizational knowledge creation perspective, this study hypothesizes that OPCOM may mediate the relationship between the knowledge acquisition and the generation of innovations in the HEI. When social integration mechanisms are connected to ACAP they can help the university to create a shared identity and mission, which can enhance trust and improve communication and collaboration across differing functional departments [46, 63]. In order to achieve a knowledge sharing atmosphere, trust among colleagues is an essential requirement [45]. This is against the backdrop of the assumption that academics at universities are usually autonomous and individually-oriented. As a result, they hesitate to share their materials with one another or are simply unwilling to do so. There needs to exist an open, transparent and honest communication among colleagues to

promote and ensure trust and confidence among each other in order to activate and enhance the intention to transfer and share knowledge. As discussed earlier communication is not only useful for getting messages across, but it is also a key mechanism through which positive work relationships which are based on trust, confidence and harmony among members of staff can be created and maintained. Openness in communication will therefore facilitate shared values and common commitments to holistic institutional goals by enabling faculty and administrative staff of the HEI to forge ahead in maintaining and sustaining positive and productive relationships [62], so that they can collectively put in their "intense effort" which is critical [3] for proactively detecting and acquiring the needed knowledge as a key resource. Again, Openness in Communication, which is a crucial element in knowledge-sharing and transfer [17], will bridge relationships of mutual trust that will stimulate a harmonious flow of information from the knowledge owner to the recipient [15] to facilitate the innovative drive of the institution as a whole. We therefore hypothesize that:

H4: The positive relationship between the knowledge acquisition and innovation generation of the HEI is mediated by Openness in communication.
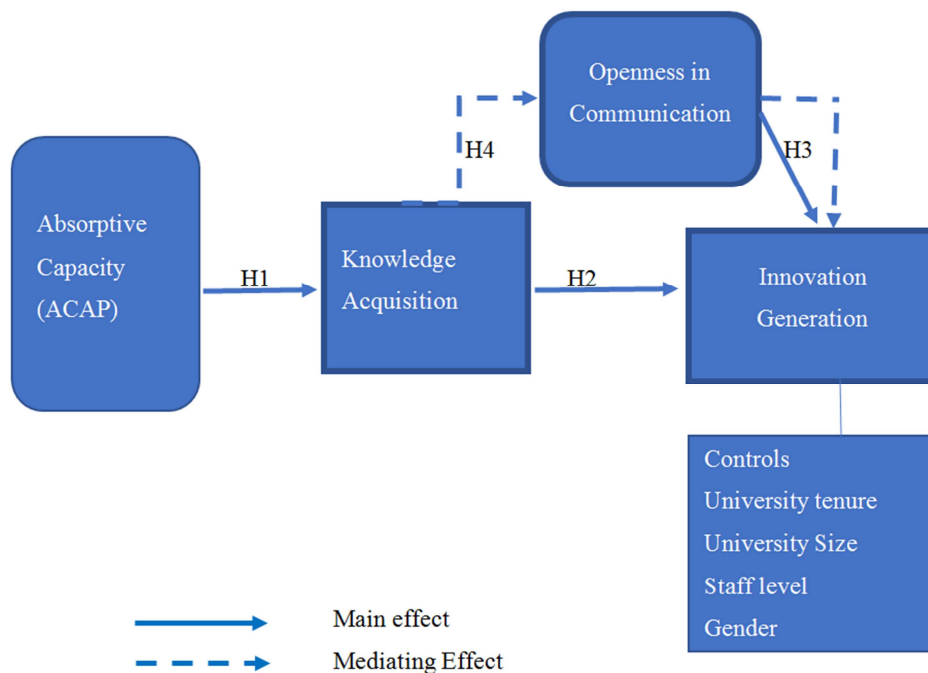
2.2. Conceptual Model

Figure 1. Conceptual Framework of ACAP process with Openness in Communication.

3. Methodology

3.1. Measurement Instrument

Content validity was improved by obtaining the measurement items for the latent variables from previous studies [64], rewording and modifying the statements to fit

the HEI context. For the dependent variable "innovation generation" (INNG) we adapted items from Wang, Zhao, and Zhou's (2018) innovation incentives scale, requiring respondents to evaluate the survey items on a Likert scale with seven (7) points from the lowest score to the highest score [65]. For the independent variable "absorptive capacity" (ACAP) we obtained items from the Potential Absorptive

Capacity and Realized Absorptive Capacity scales by Jansen et al., (2005) [48]. Additionally, we obtained items from the scales of Liao, Welsch and Stoica, (2003); Matusik and Heeley, (2005) and Zhao and Anand, (2009), which are concerned with the structures and routines for assimilating new knowledge [2, 66, 67]. We required respondents to evaluate the items on a 5-point Likert-scale ranging from the lowest score of 1 to the highest score of 5.

3.2. Mediation of Openness in Communication

A mediator variable plays the role of revealing the true relationship between the independent and dependent variables [68]. The most important aspect that can facilitate easy transfer and sharing of knowledge among academics in HEIs is their overall openness in communication and how the differing functions are able to collaborate and coordinate effectively. For "openness in communication", respondents were instructed to evaluate the survey items on a 5-point Likert-type scale ranging from the lowest score of 1 to the highest score of 5. Modified statements based on the communication scale by FarajAllah, El Talla, Abu-Naser, and Al Shobaki, (2018) were developed [69]. The mediation role played by Knowledge Acquisition in the ACAP and innovation generation link was not hypothesized in this study as that has already been established in the literature by Song et al., (2018) [8].

3.3. Sample and Data Collection

This study's population was the HEI industry and the unit of analysis was faculty staff. We collected data was from twenty (20) HEIs in the Greater Accra Region of Ghana. Paper-based questionnaires were self-administered to 380 participants out of which 282 total responses were received, representing 70.5% response rate. The response rate was good as there were no missing data or errors in any of the responses. Although this sample represents a fairly typical sector in HEIs, it is still not representative of all HEIs in Ghana. This number exceeds the minimum sample size requirement of the ten times rule recommended by Hair et al. (2022) [68].

3.4. Results and Analysis

We assessed the measurement model by calculating composite reliability, convergent validity and discriminant validity. Table 1 shows all the latent variables to be reliable as values of both Cronbach's alpha and composite reliability are higher than the 0.7 threshold in accordance with Henseler *et al.* (2015). We also used Average Variance Extracted (AVE) to assess convergent validity and factor loadings of items. Its values must be greater than 0.5 in order to have satisfactory levels of convergent validity. Table 1 shows that the AVE values for all the constructs are greater than the 0.5 as recommended by Henseler, Ringle & Sinkovics, (2015) [70]. The measurement model shows the convergent validity is good.

***Table 1.** Factor Loadings, Cross Loadings & Reliability Statistics.*

CONSTRUCT	ACAP	OPCOM	INNG	KA	CA (α)	CR	AVE
ACAP1	0.539	0.452	0.289	0.319			
ACAP2	0.600	0.317	0.415	0.367			
ACAP3	0.542	0.349	0.217	0.322			
ACAP4	0.597	0.427	0.286	0.453			
ACAP5	0.586	0.392	0.361	0.441	0.783	0.859	0.660
ACAP6	0.613	0.390	0.427	0.396			
ACAP7	0.566	0.460	0.330	0.376			
ACAP8	0.631	0.398	0.375	0.432			
ACAP9	0.605	0.472	0.369	0.443			
OPCOM1	0.393	0.801	0.498	0.355			0.505
OPCOM2	0.456	0.741	0.479	0.418	0.836	0.877	
OPCOM3	0.320	0.739	0.399	0.321			
OPCOM4	0.334	0.715	0.456	0.312			
OPCOM5	0.314	0.634	0.318	0.285			
OPCOM6	0.328	0.706	0.396	0.306			
OPCOM7	0.328	0.624	0.378	0.300			
INNG1	0.340	0.778	0.778	0.472			0.672
INNG2	0.320	0.835	0.835	0.417			
INNG3	0.361	0.870	0.870	0.460	0.901	0.924	
INNG4	0.343	0.882	0.882	0.429			
INNG5	0.374	0.834	0.834	0.336			
INNG6	0.366	0.704	0.704	0.298			
KA2	0.407	0.429	0.429	0.835			0.675
KA3	0.438	0.462	0.462	0.890	0.761	0.861	
KA4	0.335	0.300	0.300	0.732			

Note: *ACAP*-Absorptive Capacity, *OPCOM*-Openness in Communication, *INNG*-Innovation Generation, *KA*-Knowledge Acquisition, *CA*-Cronbach's alpha, *CR*-Composite Reliability. *AVE*- Average Variance Extracted.
Source: Field Data (2020).

We used the Fornell and Larcker criterion to assess discriminant validity of the constructs. It states that the average variance extracted estimates must all be higher than the construct to construct correlations [71, 68] as shown in

Table 2.

Table 2. Test of Discriminant Validity using the Fornell and Larcker Criterion, (square root of AVEs in diagonal and in bold).

CONSTRUCT	ACAP	INNG	KA	OPCOM
ACAP	0.741			
INNG	0.434	0.820		
KA	0.498	0.493	0.822	
OPCOM	0.521	0.595	0.465	0.711

Source: Field Data (2020).

3.5. Structural Model Assessment

We employed the bootstrapping resampling procedure (5000 sub samples drawn to replace the original 282 samples) to ascertain the significance of each estimated path in the structural model. We also assessed the model fit by employing the Standardised Root Mean Square Residual (SRMR). The SRMR value for a good model fit must be below 0.08, and since this study's model of 0.069 falls within the threshold recommended by [72], the reliability and validity measures, as well as the R square measures indicate that our model is able to explain the hypothesized path relationships well (see Table 3).

Table 3. Assessment of Hypotheses.

Hypotheses	Hypothesized Path	Path Coefficient (β)	T- values	P-values	Hypothesis Results
H1	ACAP → KA	0.141	1.892	0.043	Supported
H2	KA → INNG	0.276	4.938	0.000	Supported
H3	OPCOM → INNG	0.466	8.919	0.000	Supported
H4	KA → OPCOM → INNG	0.217	7.036	0.000	Supported

4. Discussion

The structural model was assessed on the basis of the statistical significance and magnitude of the predicted paths. Results for the structural model show that all four (4) hypotheses are supported in the present context (see table 3).

Absorptive capacity was found to positively and significantly predict knowledge acquisition in HEIs ($\beta = 0.141$, t = 1.892, p = 0.043). This means that the new knowledge in addition to the prior knowledge within the HEI is very important as learning is associative. The prior knowledge helps to understand the new external knowledge to enable combining them together to facilitate the knowledge acquisition (KA) for the HEI. Further, efforts made by the university to put in place its own internal procedures and processes and structures for the sharing, dissemination and diffusion of external knowledge internally at all levels, faculties or departments of the institution will positively promote the knowledge acquisition within the HEI. Hypothesis 1 is supported in this context.

Knowledge acquisition was found to positively and significantly predict innovation in the higher education institution ($\beta = 0.276$, t = 4.938, p = 0.000). This result shows that when the higher education institution is able to successfully internalize the external knowledge that has been acquired into its operations, this will naturally spur innovation through the development and improvement of academic programs research output and content for commercialization. Hypothesis 2 is supported in this context.

Openness in communication was found to positively and significantly predict innovation in the higher education institution ($\beta = 0.466$, t = 8.919, p = 0.000). Openness in communication will therefore facilitate shared values and common commitments to holistic institutional goals by enabling faculty and administrative staff of the HEI to forge ahead in maintaining and sustaining positive and productive relationships. This will enable them to collectively put in their intense efforts for proactively detecting and acquiring the needed knowledge as a key resource to generate innovative products and services for the university. H3 is therefore supported in the present context.

Openness in communication was found to positively and significantly mediate the relationship between the knowledge acquisition of the HEI and its innovation generation ($\beta=0.217$, t=7.036, p= 0.000). Communication is not only useful for getting messages across, but it is also a key mechanism which can create maintain positive work relationships which are based on trust, confidence and harmony among members of staff and stakeholders. H4 is therefore supported in the present context.

5. Conclusion

The results of the hypotheses assessments reveal that openness in communication is a very essential institutional mechanism in HEIs that will encourage a culture of teamwork and build strong relationships across faculties and departments to promote knowledge acquisition and transfer for the shared institutional vision. Openness in communication is required to bridge relationships that facilitate the process of organizational learning in HEIs such that knowledge that is discovered by an individual can be shared among organizational members and finally incorporated into the holistic institutional knowledge system. This transparency in communication will help both faculty

and administrative staff to grow together as they create and share knowledge. Again, this process of interaction within the HEI will make them go beyond their "individual boundaries", to "other boundaries" and then to the "academic community" as a whole. The absorptive capacity process can therefore not be complete unless we go through an important organizational mechanism; openness in communication in order to yield innovations for the HEI. The benefits of enhancing openness in communication in knowledge sharing and transfer among faculties and departments is clear. The findings have revealed that a high level of openness in communication will improve institutional performance by way of innovation generation.

6. Theoretical, Managerial and Policy Implications

The study extends the theory of absorptive capacity beyond its dimensions by incorporating the institutional enabler mechanism - Openness in communication into the process. In building a linkage between knowledge acquisition and innovation generation in HEIs, this study draws upon the ACAP literature to incorporate a strategic transparent communication perspective given that openness in communication behaviours can influence the generation of innovations in HEIs. It further empirically examines the intermediary role played by Openness in communication in the relationship between absorptive capacity and knowledge acquisition for innovation generation in higher education institutions. These findings are similar to Lee, Tao, Li, and Sun, (2020) who examine the impact of transparent internal communication on employee knowledge sharing behaviour among other variables [73].

The study further affirms social penetration theory's ability to explain how interpersonal relationships change over time. As people become more trusting of one another, they reveal things about themselves little by little. This means that when an individual's interaction with other colleagues in the HEI yields positive reinforcements they will begin to gradually reveal or share information that is vital for attaining institutional goals. As both parties feel good about their relationship the process gets even more enhanced and they are both able to establish trustworthy, open and genuine relationships to enhance academic knowledge sharing and transfer for the generation of innovations. Managers of HEIs need to commit to ensuring the management of Openness in communication in order to promote knowledge sharing across faculties and departments. Attention should be focused on creating lateral relations among faculty and department members in order to achieve internal social capital. Although it will be difficult to persuade university staff to engage in teams if they do not have good relationships with each other, the building of teams through open and transparent communication can lead to high levels of trust and interactions among departments and faculties to enhance inter-departmental and inter-faculty knowledge sharing.

Finally, managers must ensure that faculty and departmental goals are aligned with the overall goals of the university and staff must be encouraged to be responsible for their integrative teamwork and also act, not just as employees, but as partners through the introduction of incentives such as rewards and recognition packages. These can promote holistic knowledge management and organizational learning processes throughout the university community.

One of the key factors that can contribute to openness on communication practices by HEIs would be the involvement or commitment of HEI managers. They must institute structures that are geared towards redesigning HEIs as "Learning Organizations" (LO) by including strategic learning opportunities and collaborative knowledge sharing activities in their staff development agenda as an investment to promote a culture of openness in communication for information sharing and transfer.

References

[1] Camisón, C. and B. Forés, Knowledge absorptive capacity: New insights for its conceptualization and measurement. Journal of Business Research, 2010. 63 (7): p. 707-715.

[2] Matusik, S. F. and M. B. Heeley, Absorptive capacity in the software industry: Identifying dimensions that affect knowledge and knowledge creation activities. Journal of Management, 2005. 31 (4): p. 549-572.

[3] Cohen, W. M. and D. A. Levinthal, Absorptive capacity: A new perspective on learning and innovation. Administrative science quarterly, 1990: p. 128-152.

[4] Lane, P. J., B. R. Koka, and S. Pathak, The reification of absorptive capacity: A critical review and rejuvenation of the construct. Academy of management review, 2006. 31 (4): p. 833-863.

[5] Lewin, A. Y., S. Massini, and C. Peeters, Microfoundations of internal and external absorptive capacity routines. Organization science, 2011. 22 (1): p. 81-98.

[6] Zahra, S. A. and G. George, Absorptive capacity: A review, reconceptualization, and extension. Academy of management review, 2002. 27 (2): p. 185-203.

[7] Easterby-Smith, M., et al., Absorptive capacity: A process perspective. Management learning, 2008. 39 (5): p. 483-501.

[8] Song, Y., et al., In search of precision in absorptive capacity research: A synthesis of the literature and consolidation of findings. Journal of Management, 2018. 44 (6): p. 2343-2374.

[9] Volberda, H. W., N. J. Foss, and M. A. Lyles, Perspective-Absorbing the concept of absorptive capacity: How to realize its potential in the organization field. Organization science, 2010. 21 (4): p. 931-951.

[10] Mayo, E., The social problems of an industrial civilization, including, as an appendix: The political problem of industrial civilization. 1945: Division of Research, Graduate School of Business Administration, Harvard ….

[11] Likert, R., The human organization: its management and values. 1967.

[12] Redding, W. C., Communication within the organization: An interpretive review of theory and research. 1972: Industrial Communication Council.

[13] Jablin, F. M. and K. J. Krone, Task/work relationships: A life-span perspective. Handbook of interpersonal communication, 1994. 2: p. 621-675.

[14] Rogers, D. P., The development of a measure of perceived communication openness. The Journal of Business Communication (1973), 1987. 24 (4): p. 53-61.

[15] Men, L. R. and D. Stacks, The effects of authentic leadership on strategic internal communication and employee-organization relationships. Journal of public relations research, 2014. 26 (4): p. 301-324.

[16] Ma, E. and M. Kim, A study on the organizational members' knowledge-sharing in the public institutes. Information Systems Review, 2005. 7 (1): p. 55-67.

[17] Davenport, T. H. and S. C. Völpel, The rise of knowledge towards attention management. Journal of knowledge management, 2001.

[18] Veer-Ramjeawon, P. and J. Rowley, Embedding knowledge management in higher education institutions (HEIs): a comparison between two countries. Studies in Higher Education, 2020. 45 (11): p. 2324-2340.

[19] Jiang, H. and Y. Luo, Crafting employee trust: from authenticity, transparency to engagement. Journal of Communication Management, 2018.

[20] Rawlins, B., Give the emperor a mirror: Toward developing a stakeholder measurement of organizational transparency. Journal of public relations research, 2008. 21 (1): p. 71-99.

[21] Balkin, J. M., How mass media simulate political transparency. Journal for cultural research, 1999. 3 (4): p. 393-413.

[22] Rawlins, B. R., Measuring the relationship between organizational transparency and employee trust. 2008.

[23] Men, R. L. and S. A. Bowen, Excellence in internal communication management. 2016: Business Expert Press.

[24] Men, L. R., Internal reputation management: The impact of authentic leadership and transparent communication. Corporate reputation review, 2014. 17 (4): p. 254-272.

[25] Seonghee, K. and J. Boryung, An analysis of faculty perceptions: Attitudes toward knowledge sharing and collaboration in an academic institution. Library & Information Science Research, 2008. 30 (4): p. 282-290.

[26] Hunt, O., D. Tourish, and O. D. Hargie, The communication experiences of education managers: identifying strengths, weaknesses and critical incidents. International Journal of Educational Management, 2000.

[27] Kogut, B. and U. Zander, Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. Organization Science, 1992. 3: p. 383-397.

[28] Nonaka, I. and R. Toyama, The knowledge-creating theory revisited: knowledge creation as a synthesizing process, in The essentials of knowledge management. 2015, Springer. p. 95-110.

[29] Nonaka, I. and H. Takeuchi, The Knowledge Creating. New York, 1995. 304.

[30] Nonaka, I., G. Von Krogh, and S. Voelpel, Organizational knowledge creation theory: Evolutionary paths and future advances. Organization studies, 2006. 27 (8): p. 1179-1208.

[31] Von Krogh, G., I. Nonaka, and L. Rechsteiner, Leadership in organizational knowledge creation: A review and framework. Journal of management studies, 2012. 49 (1): p. 240-277.

[32] Nonaka, I., R. Toyama, and N. Konno, SECI, Ba and leadership: a unified model of dynamic knowledge creation. Long range planning, 2000. 33 (1): p. 5-34.

[33] Senge, P. M., The art and practice of the learning organization. Vol. 1. 1990: New York: Doubleday.

[34] Crossan, M., D. Vera, and S. Pathak, 467C8.1 Organizational Learning, in Strategic Management: State of the Field and Its Future, I. M. Duhaime, M. A. Hitt, and M. A. Lyles, Editors. 2021, Oxford University Press. p. 0.

[35] Taylor, D. A. and I. Altman, Self-disclosure as a function of reward-cost outcomes. Sociometry, 1975: p. 18-31.

[36] Baack, D., C. Fogliasso, and J. Harris, The personal imapact of ethical decisiosn: A social penetration theory. Journal of Business Ethics, 2000. 24 (1): p. 39-49.

[37] Ahuja, G. and R. Katila, Technological acquisitions and the innovation performance of acquiring firms: A longitudinal study. Strategic management journal, 2001. 22 (3): p. 197-220.

[38] Hameed, W. U., Q. A. Nisar, and H.- C. Wu, Relationships between external knowledge, internal innovation, firms' open innovation performance, service innovation and business performance in the Pakistani hotel industry. International Journal of Hospitality Management, 2021. 92: p. 102745.

[39] Wang, Z. and N. Wang, Knowledge sharing, innovation and firm performance. Expert systems with applications, 2012. 39 (10): p. 8899-8908.

[40] Asiedu, M. A. and J. K. Doe, Conceptualization of Absorptive Capacity Dimensions in Higher Education Institutions: A Qualitative View. Education Journal, 2022. 11 (6): p. 326-336.

[41] Lane, P. J. and M. Lubatkin, Relative absorptive capacity and interorganizational learning. Strategic management journal, 1998. 19 (5): p. 461-477.

[42] Grant, R. M., Toward a knowledge-based theory of the firm. Strategic management journal, 1996. 17 (S2): p. 109-122.

[43] Gagne, R. M., The acquisition of knowledge. Psychological Review, 1962. 69: p. 355-365.

[44] Srivastava, M. K., D. R. Gnyawali, and D. E. Hatfield, Behavioral implications of absorptive capacity: The role of technological effort and technological capability in leveraging alliance network technological resources. Technological Forecasting and Social Change, 2015. 92: p. 346-358.

[45] Nonaka, I., A Dynamic Theory of Organizational Knowledge Creation. Organization Science, 1994. 5: p. 14-37.

[46] Kezar, A., J. P. M. Dizon, and D. Scott, Senior leadership teams in higher education: What we know and what we need to know. Innovative Higher Education, 2020. 45 (2): p. 103-120.

[47] Kezar, A., Redesigning for collaboration within higher education institutions: An exploration into the developmental process. Research in Higher Education, 2005. 46 (7): p. 831-860.

[48] Jansen, J. J., F. A. Van Den Bosch, and H. W. Volberda, Managing potential and realized absorptive capacity: how do organizational antecedents matter? Academy of management journal, 2005. 48 (6): p. 999-1015.

[49] Sykes, S., Talent, diversity and growing expectations. Journal of Communication Management, 2002.

[50] Voolaid, K. and Ü. Ehrlich, Organizational learning of higher education institutions: the case of Estonia. The Learning Organization, 2017.

[51] Paudel, K. P., Level of Knowledge Management among Faculty Members in the Context of Nepali Higher Educational Institution. Dhaulagiri Journal of Sociology and Anthropology, 2020. 14: p. 124-130.

[52] Todorova, G. and B. Durisin, Absorptive capacity: Valuing a reconceptualization. Academy of management review, 2007. 32 (3): p. 774-786.

[53] Chen, C.-J. and J.-W. Huang, Strategic human resource practices and innovation performance—The mediating role of knowledge management capacity. Journal of business research, 2009. 62 (1): p. 104-114.

[54] Dyer, J. H. and K. Nobeoka, Creating and managing a high-performance knowledge-sharing network: the Toyota case. Strategic management journal, 2000. 21 (3): p. 345-367.

[55] Osobajo, O. A. and B. Bjeirmi, Aligning tacit knowledge and competitive advantage: a resource-based view. International Journal of Knowledge Management Studies, 2021. 12 (3): p. 203-226.

[56] Nonaka, I. and N. Konno, The concept of "Ba": Building a foundation for knowledge creation. California management review, 1998. 40 (3): p. 40-54.

[57] Chen, H., et al., Extrinsic and intrinsic motivation for experience grounded tacit knowledge sharing in Chinese software organisations. Journal of Knowledge Management, 2018.

[58] Tsai, W., Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. Academy of management journal, 2001. 44 (5): p. 996-1004.

[59] Nahapiet, J. and S. Ghoshal, Social capital, intellectual capital, and the organizational advantage. Academy of management review, 1998. 23 (2): p. 242-266.

[60] Bartels, F. and R. Koria, Mapping, measuring and managing African national systems of innovation for policy and development: The case of the Ghana national system of innovation. African Journal of Science, Technology, Innovation and Development, 2014. 6: p. 383-400.

[61] Schomaker, M. S. and S. Zaheer, The role of language in knowledge transfer to geographically dispersed manufacturing operations. Journal of International Management, 2014. 20 (1): p. 55-72.

[62] Herriot, P. and W. Scott–Jackson, Globalization, social identities and employment. British Journal of Management, 2002. 13 (3): p. 249-257.

[63] Yang, S.-Y. and K.-H. Tsai, Lifting the veil on the link between absorptive capacity and innovation: The roles of cross-functional integration and customer orientation. Industrial Marketing Management, 2019. 82: p. 117-130.

[64] Straub, D., M.-C. Boudreau, and D. Gefen, Validation guidelines for IS positivist research. Communications of the Association for Information systems, 2004. 13 (1): p. 24.

[65] Wang, L., J. Z. Zhao, and K. Z. Zhou, How do incentives motivate absorptive capacity development? The mediating role of employee learning and relational contingencies. Journal of Business Research, 2018. 85: p. 226-237.

[66] Liao, J., H. Welsch, and M. Stoica, Organizational absorptive capacity and responsiveness: An empirical investigation of growth–oriented SMEs. Entrepreneurship Theory and practice, 2003. 28 (1): p. 63-86.

[67] Zhao, J. and J. Anand, A multilevel perspective on knowledge transfer: Evidence from the Chinese automotive industry. Strategic Management Journal, 2009. 30: p. 959-983.

[68] Hair, J., et al., A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). 2022.

[69] FarajAllah, A., et al., The Nature of Work and Its Relation to the Type of Communication among Employees in Palestinian Universities-A Comparative Study between Al-Azhar and Al-Aqsa Universities. 2018.

[70] Henseler, J., C. M. Ringle, and M. Sarstedt, A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the academy of marketing science, 2015. 43 (1): p. 115-135.

[71] Fornell, C. and D. F. Larcker, Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 1981. 18: p. 39-50.

[72] Hu, L. t. and P. M. Bentler, Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural equation modeling: a multidisciplinary journal, 1999. 6 (1): p. 1-55.

[73] Lee, Y., et al., Enhancing employees' knowledge sharing through diversity-oriented leadership and strategic internal communication during the COVID-19 outbreak. Journal of Knowledge Management, 2020.