Role of Dynamic Capabilities on the Relationship of Social Capital and Research Productivity of Academic Staff in Kenyan Universities

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***Abstract*- The quality and quantity of research publications by academic staff play a major role in determining the performance of universities. In addition, research output is expected to provide solutions to challenges facing the society at large. Moreover, research productivity is a key measure of achievement as well as a key instrument in improving the quality of teaching and knowledge creation. This implies that a key priority for the academic staff in Kenyan universities is how to increase their research productivity. However, research productivity of academic staff in Kenyan universities is characterised by limited publications. Hence, the purpose of this study was to investigate the role of dynamic capabilities on the relationship of social capital and research productivity of academic staff in Kenyan universities. This study adopted a correlational research design and sampled 392 academic staff members. Both regression and bootstrap analyses were used to test the hypotheses. The findings revealed that, social capital has a significant influence on research productivity of academic staff in Kenyan universities; however, the influence is not direct, but is partially mediated by dynamic capabilities. The study concluded that while social capital is a key knowledge-based resource necessary for improving research productivity, dynamic capabilities are also needed to deploy and reconfigure these resources. The study findings enlighten the academic staff on the importance of investing seriously in both social capital and dynamic capabilities to improve their research productivity. Additionally, the study outcomes inform the university management on significant antecedents of research productivity of academic staff.**

***Key Words*: Social Capital, Dynamic Capabilities, Research Productivity, Academic Staff, Universities, Kenya**

I. INTRODUCTION

The role of academics within the university comprises teaching, research and service (Kpolovie & Onoshagbegbe, 2017; Mushemeza,2016). Research has taken a central position due to the emergence of the knowledge economy, globalization, and internationalization of university education coupled with accelerated changes in technology (Cloete, Maassen & Bailey ,2015). Consequently, research productivity is now an integral component of the academic world. Research productivity is a combination of two terms: research and productivity (Igbal & Mahmood, 2011). Research refers to careful, observant and vigilant investigation of a phenomenon to find out solutions to problems and to gain new knowledge (Kpolovie & Onoshagbegbe, 2017). Productivity is the output produced in a duration of time (Igbal & Mahmood, 2011). Hence, research productivity refers to research output over a period of time.

Research productivity of a university is the totality of research performed by the university's academics within a period of time (Kpolovie & Onoshagbegbe, 2017, Migosi, Migiro & Ogula, 2011; Mueller, Gaus & Konratdt (2016). Hence, an increase in research productivity of academic staff results to an overall increase in research productivity of universities. Worldwide, research productivity has increased tremendously as evidenced by the large increase in the number of journals, proceedings and book-series (Larsen & Von Ins, 2010). In the same vein, the Organization for Economic Co-operation and Development (OECD,2014) notes that globally, the number of researchers has increased considerably. Likewise, research productivity in Africa has greatly improved over the last decade, for example, between 2003 and 2012, Sub Saharan Africa's share of global research increased from 0.44% to 0.72% (World Bank, 2014). Nonetheless, Africa is still lagging behind the rest of the world in research. Africa's contribution to the word's research output is less than 1% (Dkhili & Oweis, 2018).

A study by Kpolovie and Dorgu (2019) on comparison of faculty's research productivity in Africa found out that the h-index and the citation index of African universities are significantly lower than the world averages of 17.50 and 971, respectively. Furthermore, in the 2020 times higher education only the University of Cape Town was ranked among the top 193 world universities, similarly, none of the African universities made the top 197 world universities in the QS World University Rankings 2020 while the Ranking Web of Universities 2019 listed only one university in Africa among the top 273 world universities. In these rankings research productivity of faculty is generally a key indicator (Kpolovie & Dorgu, 2019).

Research productivity of academic staff is the crux for advancing Kenya's research agenda. Kenya's research agenda

is aimed at the realisation of Vision 2030. Kenya Vision 2030 is a development blue print that aims to transform Kenya into a globally competitive, middle-income country by 2030 (Republic of Kenya, 2007). To achieve this transformation, the government recognises research as a critical component. As such, the realisation of vision 2030 is underpinned by the generation of new knowledge through research. In the medium-term period 2018-2022, the government set four research priorities dubbed the 'Big 4 Agenda' on food and nutrition security, affordable housing, manufacturing and universal health care coverage to address the most immediate needs of the nation (Ministry of Education, 2019). In this regard, universities are recognised as key players in conducting research on the generation and dissemination of new knowledge. However, research productivity of academic staff in Kenyan universities is characterized by limited publications resulting to low positioning of Kenyan universities in global rankings.

Data collected from the 74 Kenyan universities reveals that there were only 6,662 publications from a total of 20,408 academic staff in all the Kenyan universities for the period 2017/2018 (Commission for University Education, 2019). This situation is of great concern and urgently calls for increased productivity by academics in Kenyan universities. Academic staff are expected to lead in embracing research if they are to play their role in driving the national research agenda (Ministry of Education, 2019). This implies that a key priority for the academic staff in Kenyan universities is how to increase their research productivity. Hence, the need for development of social capital is ever more urgent. However, the reliance on social capital alone cannot fully account for high research productivity, there is need to take into account other factors such as dynamic capabilities.

Scholars have demonstrated that social capital can improve research productivity (Ductor, 2015, Hara, Chen, and Ynalvez, 2017; Hong and Zhao (2016). However, much uncertainty still exists about the role of dynamic capabilities in the relationship between social capital and research productivity. Although some research has been carried out on the mediating effect of dynamic capabilities, the empirical studies so far have focused on the manufacturing industry (Aminu & Mahmood, 2015; Cassol, Gonçalo & Ruas, 2016). Far too little attention has been paid on the mediating effect of dynamic capabilities in a university context. Besides, there is very little scientific understanding of how dynamic capabilities influence the relationship between social capital and research productivity of academic staff in Kenyan universities. Therefore, the key research question in this study was; what is the role of dynamic capabilities on the influence of social capital on research productivity of academic staff in Kenyan universities? Hence, the study hypothesised that;

H_a: Dynamic capabilities mediate the influence of social capital on research productivity of academic staff in Kenyan universities

In order to test this hypothesis, the study was guided by the following objectives;

i. To determine the level of social capital of academic staff in Kenyan universities
ii. To examine the level of dynamic capabilities of academic staff in Kenyan universities
iii. To assess the level of research productivity of academic staff in Kenyan universities
iv. To determine the role of dynamic capabilities on the relationship of social capital and research productivity

After the introduction section of this paper, the paper discusses the concepts of social capital and dynamic capabilities. This is followed by a review of empirical studies related to social capital and research productivity. The research methods and tools used in this study are then explained in detail under the section on research methodology. This section is followed by an elaborate discussion of findings of the study and tests of hypotheses. Finally, this paper gives a brief conclusion of the study and its managerial implications. In addition, the paper highlights the limitations of the study and gives suggestions for further research.

II. LITERATURE REVIEW

Social Capital

The concept of social capital goes way back to the 1960s when it was described as a relational resource embedded in communities and families (Al-Tabbaa & Ankrah, 2016). Since then, social capital has attracted enormous interest among many scholars as seen in its application in numerous studies for instance in innovation (Martı´nez-Can˜as, Sa´ez-Martı´nez, & Ruiz-Palomino, 2012), conflict (Avgar, Lee, & Chung, 2014), knowledge productivity (Huang & Wu, 2010) and technology transfer (Al-Tabbaa & Ankrah, 2019). As a result, literature now contains a variety of definitions on social capital. Social capital refers to collectively owned resources that are embedded in and derived from interactions of individual actors or social units (Kwon & Adler, 2014). Similarly, social capital is defined as knowledge that individuals obtain from their social networks (Akpey & Tabita, 2020). Social capital represents the ability of workers to secure benefits through membership in social networks (Hassan, Baharom, & Abdul, 2017). Overall, these definitions suggest that social capital represents knowledge that is derived from interactions of individuals.

In several studies, social capital has often been operationalized through three dimensions - structural dimension, relational dimension and cognitive dimension (Al-Tabbaa & Ankrah, 2019; Martı´nez-Can˜as, et al., 2012; Nahapiet & Ghoshal, 1998). Structural dimension represents patterns and series of connections that are formed by individuals or organizations with others (Al-Tabbaa & Ankrah, 2016). Structural dimension also focuses on the strength of ties arising from these networks, types of relations and also the position of the relationship within the networks

(Martı´nez-Can˜as, et al., 2012). These structures are beneficial since they enhance exchange of knowledge by lessening the time and investment required to share such knowledge (Hartmann & Herb, 2015). The structural dimension is important in research activities because the social networks are a valuable source of knowledge and information necessary for the functioning of researchers (Rodriguez & Gonzalez-Brambila, 2016). Moreover, this dimension also represents the strength of the established links between researchers (Frutos-belizón, Martín-alcázar & Sánchez-gardey, 2019). In this sense, the structural dimension signifies existence of frequent and strong relationships between researchers.

Relational dimension refers to the nature and content of individual relations in a network (Zheng, 2010). It encapsulates resources such as trust, reciprocity, commitment, reliability and shared norms that arise from interactions of actors (Al-Tabbaa & Ankrah, 2016). These resources improve quality of relationships because they facilitate control while increasing mutual understanding (Hartmann & Herb, 2015; Martı´nez-Can˜as, et al., 2012). The relational dimension represents the nature of connections established between researchers defined by a social climate based on trust and reliability. Trust among researchers enhances collaboration and sharing of resources without fear of exploitation by the other researchers (Lin, Wu, Hsiang, Yang, 2013). Also, knowledge generation and sharing requires a good interpersonal climate so that researchers can view each other as reliable sources of knowledge (Rodriguez & Gonzalez-Brambila, 2016).

Cognition dimension refers to those resources that facilitate members' development of a common perspective, interpretation and understanding (Zheng, 2010). These resources include shared goals, research language and shared underlying assumptions (Nahapiet & Ghoshal, 1998). The resources are beneficial because they facilitate exchange of information by offering a common denominator for transaction which further optimize interpretation of shared knowledge (Al-Tabbaa & Ankrah, 2019; Zheng, 2010). This dimension entails features related to the understanding between individuals, which improves the interpretation and meaning of their relationships (Nahapiet & Ghoshal, 1998). The extent to which research language is shared by researchers influences the ease of access to each other's knowledge (Frutos-belizón, et al., 2019). Moreover, researchers with strong links and a shared vision benefit from sharing and consolidation of resources within their network (Fullwood, Rowley, & Delbridge, 2013). Through the three dimensions, it is evident that social capital is a socially constructed and shared resource that is derived from social relationships connecting the various actors and which brings benefits to the participants. Unlike human and structural capital, social capital is embedded in relationships between individuals, hence, it is co-owned.

Dynamic Capabilities

Globalisation and rapid social and technological changes have caused today's business environment to undergo fierce competition and continuous change (Laaksonen & Peltoniemi, 2018; Wu, Chang, Lin, & Cheng, 2015). To survive in this era, organisations must constantly align and realign themselves in a dynamic environment (Breznik & Lahovnik, 2016). A growing body of literature proposes that dynamic capabilities provide insight into an organisation's ability to respond to changing environments (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997). The dynamic capabilities approach emphasises how organisations' internal capabilities transform resources into superior performance (Barney, 1991; Teece, 2012).

Four components of dynamic capabilities are identified: sensing capabilities, learning capabilities, integrating capabilities and coordinating capabilities (Muneeb, Tehseen & Saeed, 2020; Pavlou & Sawy, 2011; Rehman & Saeed, 2015; Teece, Pisano & Shuen, 1997). These capabilities are responsible for sensing opportunities in the environment, seizing opportunities and recombining the resource base to address changes and opportunities in the environment (Breznik & Lahovinik, 2016; Eisenhardt & Martin, 2000). In light of this, Ambrosini, Bowman and Collier (2009) state that the role of dynamic capabilities is to impact on a firm's extant resource base, transforming it to a new configuration of resources so that the firm can sustain its competitive advantage. Thus, it has been recognized that dynamic capabilities are the transformational process by which intangible resources are leveraged to create sustainable performance.

The University of the 21st century is in a period of continuous transition (Ramsey & Wesley, 2015). Universities face challenges such as high operational costs, intense competition, increased government regulations, reduced financial resources, and rapid changes in the economy (Linsey & Tiffany, 2014). Akram (2017) notes that universities are service-oriented firms that operate in a dynamic environment. Moreover, the evolution of science, combined with changes in the needs of society, is calling for a paradigm shift in the way universities handle knowledge (Didier & Frédéric, 2016). Previous studies have revealed that in response to these changes, it is necessary for universities to deploy dynamic capabilities (Dzinekou & Arasa, 2018). Similarly, as the level of dynamics within and outside the university increases, employees within these universities will also be required to respond to these changes. Employees will require not only knowledge-based resources but also dynamic capabilities to deploy these resources during situations of change.

Social Capital and Research Productivity

Previous studies show that there is a substantial increase in application of social capital in research. Ductor (2015) examined the effect of academic collaboration on academic productivity of economists in Newzeland who had published

between 1970 and 2011. The database used in the study contained 550,000 articles published in journals listed in EconLit. Academic collaboration was measured by the ratio between the number of co-authored articles and the number of articles published by the individual during the period. By use of descriptive analysis, the study observed that individual academic productivity increased as authors substituted sole authorship for teamwork. The findings of this study reveal that the academic collaboration has the potential to affect individual academic productivity because it facilitates exchange of knowledge and information between the co-authors leading to a knowledge spill over.

Other studies show that in addition to collaboration, the social networks formed by academics explain why some academics have higher research outputs than their peers. Social networks facilitate access to essential resources and exchange of research information. Hara, Chen, and Ynalvez (2017) sought to identify how international ties affect publication by faculty and doctoral students in life sciences in ten research institutions in Japan, Singapore and Taiwan. The study reported that doctoral students with higher proportion of international ties published more papers and wrote more manuscripts. However, the study revealed that international ties did not affect the number of manuscripts written by faculty or the number of papers they published. Nonetheless, the ties enhanced publication of papers in top journals.

Hong and Zhao (2016) carried out a national survey of scientific personnel to investigate the relationship between professional social networks and scientific performance. The study sampled 150 science and technology personnel in research related institutions such as universities and hospitals in China. In this study, the scientists' performance was measured using academic recognition, government recognition and market recognition. Academic recognition entailed publications of articles in internationally recognised journals. They collected data using self-administered questionnaires and employed regression models using Poisson distributions to analyse the data. The study revealed that social networks facilitated access to useful information and knowledge which fosters the scientists' human capital enabling them to publish and patent. Hence, the study findings indicated that size and composition of scientists' social networks have significant effect on scientific performance. Overall, these studies have shown that to capitalize research productivity, social capital could play an important role.

The reviewed empirical studies on social capital and research productivity failed to adequately explain the process through which social capital influences research productivity. According to Khan and Terziovski (2014), to clearly understand this process, researchers should consider introducing a mediating variable. Although there are many mediating factors that might influence this relationship, dynamic capabilities are often cited as important mediators for organizations operating in turbulent environments (Aminu & Mahmood, 2015; Obeidat, et al., 2017; Kamukama, Ahiauzu, & Ntayi, 2011). However, far too little attention has been paid to the role of dynamic capabilities in the relationship between social capital and research productivity.

From the foregoing discussion, it is evident that despite the existence of studies on social capital and research productivity, there is a dearth of a general model showing clear linkages between elements of social capital, dynamic capabilities and research productivity. Consequently, this study was conducted to fill the knowledge gaps arising in previous studies. This study examined the mediating role of dynamic capabilities on the influence of social capital on research productivity of academic staff in Kenyan universities.

III. RESEARCH METHODOLOGY

Research Design

This study was based on correlational research design. Correlational research design was deemed appropriate because it enables a researcher to estimate the relationship between the variables under study.

Study Population and Sample

The study's target population was the academic staff (on a permanent employment basis) in chartered private and public universities in Kenya. There are approximately 19,020 academic staff in both private and public chartered universities in Kenya (CUE, 2019). This study included academic staff at four levels: professors, associate professors, senior lecturer/senior research fellows and lecturer/research fellows. By 2019, Kenya's university education sector comprised 49 chartered universities. This included 31 public chartered universities and 18 privately chartered universities. In this study, mixed sampling techniques were applied. First, universities were selected using stratified random sampling techniques. Universities were stratified into private and public universities. From the two strata, 13 universities were randomly selected, eight from public universities and five from private universities. Thereafter, the faculties were selected using systematic random sampling. Finally, respondents were selected from faculty members using stratified random sampling. The academic staff were stratified into four ranks: professors, associate professors, senior lecturer/senior research fellows and lecturer/research fellows. A sample of 392 academic staff members was selected from the study population.

Data Collection

A structured questionnaire was used to collect the data. The questionnaire was preferred because it is considered the best tool for collecting primary data from a large sample (Ngigi, Wakahiu & Karanja, 2016). This study assessed content validity of the questionnaire used to collect data. Content validity measures whether the research instrument adequately covers all the important aspects of the domain being measured (Yaghmale, 2009). To determine content validity, Burns and

Grove (1997) recommend the use of three methods: literature, representatives of the relevant population and use of experts. Past theory and literature were used to develop the scales for the study variables. Additionally, experts who included academic staff and practitioners in human resource management and strategic management fields were requested to give their views on the research instrument due to their expertise in the areas of human capital and dynamic capabilities respectively. Their views were considered in determining how well the items in each scale in the questionnaire covered all the content they were expected to cover, that is the comprehensiveness and representativeness of the content of a scale. Test-retest reliability test was used to determine reliability of the research instrument. Test-retest reliability involves administering the same research instrument to the same subjects under the same conditions at two different times and correlating the scores (Deniz & Alsaffar, 2013). Using Pearson correlation, a reliability coefficient between the scores on the first and the second testing were used to estimate the reliability of the questionnaire items. The reliability statistics ranged from 0.81-0.86. These values were all > 0.70, indicating good reliability.

Data Analysis

Data analysis was done at two levels by use of both descriptive and inferential statistics. Descriptive statistics are used to summarize and process data transforming it into information (Newbold, Carlson & Thorne, 2010). Inferential statistics enable the researcher to make inferences from the sample to the population (Ngigi, et al., 2016). The present study used frequencies, percentages, means and standard deviation to summarize the responses in order to describe the sample population. To determine the mediation role of dynamic capabilities, causal step approach and the bootstrap analysis were used. These approaches combine both simple and multiple regression to infer mediation Demming, Jahn, & Boztug, 2017; Zhao, Lynch & Chen, 2010). The causal step approach by Baron and Kenny (1986) was used to determine if there is a mediation between social capital and research productivity and also to assess the type of mediation. However, the causal step approach, has been criticized for its failure to test the indirect effect (Demming, et al., 2017; Zhao, et al., 2010). To test the significance of the indirect effect, this study used the bootstrap analysis. The analysis was based on the percentile bootstrap analysis which computes the 95% confidence interval for the true value of the indirect effect (Yzerbyt, Muller, Batailler & Judd, 2018). Thus, the significance intervals were calculated to define the 2.5th and the 97.5th percentile values. If the confidence interval did not include zero, the study concluded that the indirect effect was significant as recommended by Hayes (2009), Kane and Ashbaugh (2017), Yzerbyt, et al., (2018) and Zhao, et al. (2010)

IV. FINDINGS AND DISCUSSION

Research Objectives

The first research objective aimed at examining the level of social capital of academic staff in Kenyan universities. Social capital was measured by use of a six item, five-point social capital scale. The summated score on the social capital scale constituted the level of social capital of the respondents. Majority of the respondents (71.6%) had a high level of social capital, while only 1.2% of the respondents had a low level of social capital. This implies that academic staff in Kenyan universities have close and repeated interpersonal relationships, guided by trust, shared research goals and common research language that can facilitate their research activities. These findings are illustrated in Figure 1.0.

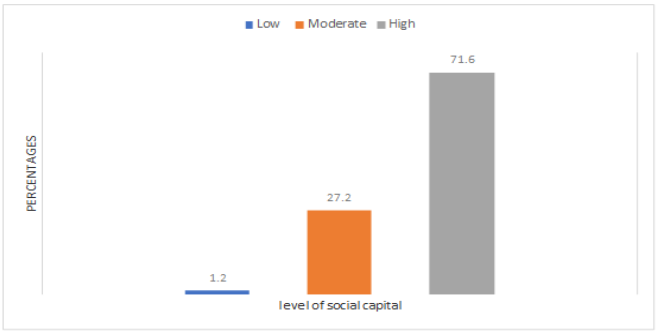


Figure 1.0: level of Social Capital

The second research objective focused on the level of dynamic capabilities of academic staff in Kenyan universities. Dynamic capabilities were measured by use of a nine item, five-point dynamic capabilities scale. The summated score on the dynamic capabilities scale constituted the level of dynamic capabilities. Results on figure 2.0 reveal that 83.4% of the respondents had a high level of dynamic capabilities. This implies that academic staff in Kenyan universities have dynamic capabilities that can be deployed to reconfigure the resource base enabling them to sustain high research productivity during rapid changes in the research environment.

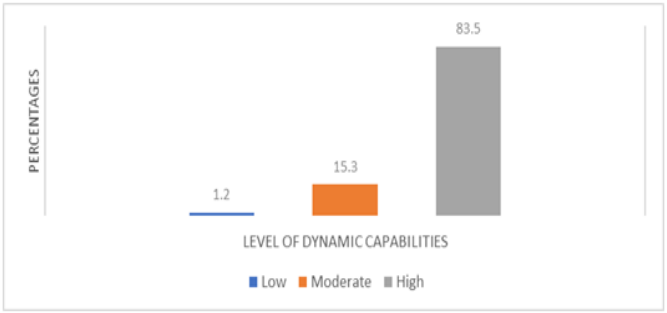


Figure 2.0*:* Level of Dynamic Capabilities

The third research objective assessed the level of research productivity of the academic staff in Kenyan universities. The results in Table 1.0 show that, on average, the respondents published four articles, one book chapter and two

consultancy/research reports within the three years of study. Moreover, within the same period of time, on average the respondents did not publish even one book. The range shows that within the three years, the minimum response on number of articles published is 2 and the maximum is 5 meaning that none of the respondents published less than two articles and none published more than 5 articles. The maximum response on number of book chapters published is 4, the minimum is zero meaning that some of the respondents did no publish any book chapter. This is the same with consultancies which has a maximum response of 5 and a minimum of zero. This implies that while some respondents published up to 5 reports, others did not publish any. As for the books, the findings show that while some respondents reported to have published up to three books (12 publication points) within the three years, others had published none. These results suggest that, on average, research productivity of academic staff in Kenyan universities is characterised by low publication of all the four research outputs examined in this study. These findings mirror those of Schalkwyk and Cloete (2019) who reported that on average, each academic member at the University of Nairobi published one article in refereed journal per annum.

Table 1.0: Mean, Standard Deviation and Range on Measures of Research Productivity

	Articles	Book chapters	Consultancy/ Research Report	Books
Mean	4.33	1.70	2.21	3.01
Std. Deviation	.792	1.301	1.771	3.099
Minimum	2	0	0	0
Maximum	5	4	5	12

The fourth objective aimed at determining the role of dynamic capabilities on the relationship of social capital and research productivity. Table 2.0 shows the results obtained from the regression analysis on the influence of social capital on research productivity through dynamic capabilities. In the first step (path *c*), social capital predicts research productivity (β= 0.250, p<0.05). The R^2 is (0.149, F=55.758, p<0.05). The F statistic suggests that the model is statistically significant.

In the second regression model (path *b*), social capital predicts dynamic capabilities (β= 0.905, p<0.05). In the third regression model (path *b*), the results reveal a significant influence of dynamic capabilities on research productivity while controlling for social capital (β= 0.117, p<0.05). Finally, in the fourth regression model, the results show the direct influence of social capital on research productivity (β = 0.144, p<0.05). There is a change in the R^2 which increased from 0.149 in the first regression model to 0.175 (ΔR^2 = 0.026) in the fourth regression model. The F statistics in all the four steps are significant (p<0.05). Thus, following the recommendations for mediation by Baron and Kenny (1986), these results imply that the influence of social capital on research productivity is not a direct one but is partially mediated by dynamic capabilities.

Table 2.0: Regression Results for the Influence of Social Capital (SoC) on Research Productivity through Dynamic Capabilities

Step	Tested Path	Regression Equation	Coefficients	R squared	F value
Step 1	Path c Total Influence of SoC on RP	$\gamma = \alpha + \boldsymbol{\beta SoC} + \varepsilon$	0.250**	0.149	55.758**
Step 2	Path a influence of SoC on DC	$M = \alpha + \boldsymbol{\beta SoC} + \varepsilon$	0.905**	0.510	331.304**
Step 3	Path b Influence of DC on RP	$\gamma = \alpha + \beta_1 SoC + \boldsymbol{\beta_2 DC} + \varepsilon$	0.117**	0.175	33.616**
Step 4	Path c' Direct Influence of SoC on RP	$\gamma = \alpha + \boldsymbol{\beta_1 SoC} + \beta_2 DC + \varepsilon$	0.144**	0.175	33.616**

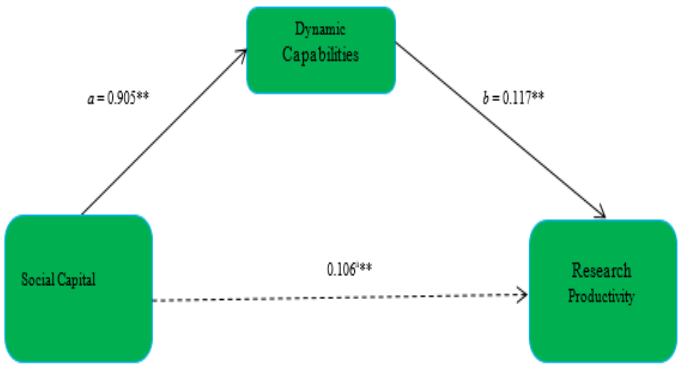
**p < 0.05

Note: Bolded terms represent the tested parameters

Hypothesis Testing

The study hypothesised that dynamic capabilities have a significant mediation effect on the influence of social capital on research productivity of academic staff in Kenyan universities. The decision rule was to reject the null hypothesis if the 95% confidence level does not include zero.

Results of the bootstrap analysis indicate that the proposed indirect effect β=0.106 is statistically different from zero as the confidence interval 0.0414 and 0.1728 does not include zero. These results reveal that dynamic capabilities have a significant mediation effect on the influence of social capital on research productivity. A summary of these results is illustrated in Figure 3.0. From these results, it can be inferred that social capital has an indirect significant influence on research productivity of academic staff through dynamic capabilities.



**P<0.05 [a:] Indirect influence

Figure 3.0 Path Diagram Representing the Indirect Influence of Social Capital on Research Productivity

The findings of this study provide sufficient evidence to support the mediating effect of dynamic capabilities on the relationship between social capital and research productivity. The statistical analysis of this study established that social capital influences research productivity indirectly through dynamic capabilities: social capital (β=0.106, 0.0414 and 0.1728). These results confirm the role of dynamic capabilities in the deployment of a resource base to enhance research productivity. The results endorse the view that the relationship between social capital and research productivity is not direct; rather it is indirect through the intervention of dynamic capabilities. The study findings identify dynamic capabilities as a critical factor linking social capital to research productivity. These findings suggest that possession of high levels of social capital is not enough to improve research productivity. Rather, understanding the mediating role of dynamic capabilities (sensing, learning, integrating and coordination) of academic staff goes a long way to explain the extent to which social capital influence research productivity of academic staff. This suggests that academic staff in universities should consider the role of dynamic capabilities in the deployment of social capital in the ever-changing research environment in which they operate.

V. MANAGERIAL IMPLICATIONS

The study findings established that the influence of social capital on research productivity of academic staff in Kenyan universities is not direct, but through dynamic capabilities In regard to this, the study concluded that the ability of academic staff to sense changes in the environment, learn new knowledge or revamp already learnt knowledge to respond to the changes; the ability to integrate new knowledge with existing knowledge and also the ability to coordinate resources and tasks are critical in enhancing deployment of social capital. In addition, the study findings revealed that dynamic capabilities have a partial mediation influence on social capital as a driver of research productivity. Therefore, this study concluded that although dynamic capabilities explain the relationship between social capital and research productivity of academic staff in Kenyan universities, they do not explain this relationship fully. These results would seem to suggest that beyond dynamic capabilities there are other variables that explain the relationship between social capital and research productivity of academic staff in Kenyan universities.

These results are relevant to top management in understanding the importance of social capital and dynamic capabilities in the context of academic research. The study shows that dynamic capabilities play a significant mediating role between social capital and research productivity. University management need to realize that if they want to sustain research productivity of the academic staff, it is essential that the academic staff have the necessary dynamic capabilities. Academic staff need not only social capital, but also dynamic capabilities to reconfigure the knowledge-based resources to enable them respond to changes in the research environment while at the same time creating difficulties for competitors to replicate these resources. To be able to sense, seize and transform, academic staff will need to develop sensing, learning, integration and coordination capabilities. Therefore, this study recommends that academic staff in Kenyan universities engage in continuous individual learning, be willing to learn from their experiences and be keen to share knowledge to build up their dynamic capabilities.

The empirical findings of this study provide a new understanding into the possibilities for enhancing research productivity of academic staff in Kenyan universities through intangible resources in form of social capital and dynamic capabilities. The findings of this study confirm previous findings and contributes additional evidence that social capital influences research productivity through dynamic capabilities. This improves both theory and practice by explaining how academic staff can achieve and maintain high research productivity in turbulent environments. The partial mediation role of dynamic capabilities reported in this study indicates the possibility of other variables that intervene the relationship between social capital and research productivity. This finding is very important because it provokes theoretical progress in future work by encouraging other researchers to search for other mediation mechanisms that explain the relationship between intellectual capital and research productivity.

VI. LIMITATIONS OF THE STUDY

This study can be improved from a methodological and theoretical perspective. First, the findings of the study indicate a partial mediation effect. The implication of these results is that dynamic capabilities do not completely mediate the relationship between social capital and research productivity, rather, there is a possibility of other alternative mediator(s) that also influence this relationship. Besides implying possibility of an omitted mediator, these results may also suggest that an important moderator was not taken into account in this research. Future studies should consider multiple mediation models to enable researchers to probe other mediators that explain the relationship between social capital and research productivity. Moreover, moderated meditated analysis should be considered in future research. Moderated mediation offers insight into whether the mediation is dependent on another variable, or if the mediation exists for one subgroup of the sample but not for another or if the mediation is conditional on different contexts.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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