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Attitude Matters: Exploring The Knowledge Sharing Behavior Of Academics In Ethiopian Public Higher Education Institutions

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ATTITUDE MATTERS: EXPLORING THE KNOWLEDGE SHARING BEHAVIOR OF ACADEMICS IN ETHIOPIAN PUBLIC HIGHER EDUCATION INSTITUTIONS

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Abstract

This study examines the knowledge sharing practices of academics in Higher Education Institutions(HEI) in Ethiopia in the process of conducting research and disseminating their research outputs. Based on the understanding that Knowledge Sharing is a key enabler of Knowledge Management, the study analyses how individual based variables determine knowledge sharing practices. The relevant variables are drawn from the Theory of Planned Behavior where knowledge sharing is predicted by faculty's intention towards knowledge sharing which in turn would be predicted by attitude towards knowledge sharing, the subjective norm about sharing and the perceived behavioral control over sharing knowledge. A survey instrument that has employed the conceptual framework was developed mainly from the extant literature in order to collect data from faculty of the selected HEIs in Ethiopia. A quantitative approach of study - Structural Equation Modeling (SEM) - was employed to analyze the data obtained from the survey. The data was analyzed using the Smart-PLS statistical tool. And based on the findings, the study concluded that sharing of knowledge was significantly predicted by the level of inter-organizational trust among colleagues which impacted on attitude to share knowledge.

Key words: Knowledge sharing, Knowledge Management, Higher Education Institution, Smart-PLS

1. Introduction

Since the time the famous management guru, Peter Drucker, coined the term 'knowledge worker' in the 1960s, Knowledge Management (KM) has drawn the attention of many and has evolved as a valuable theme transcending disciplinary boundaries (Skyrme, 2002). New knowledge initiatives under the KM umbrella are introduced in modern organizations. Furthermore, with advances in technology, as web-based and content management technology becomes more mature, IT-enabled KM solutions have become more commonplace (Skyrme, 2002). Thus, the uptake of social technologies such as blogs, wikis and Face book-like 'Yellow Pages' are evidences of the growing demand for the use of KM.

KM is defined as "the explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation. It requires turning personal knowledge into corporate knowledge that can be widely shared throughout an organization and appropriately applied" (Baskerville and Dulipovici, 2006:84). The literature, however, asserts that a key enabler of KM, one that is crucial to exploiting core competencies and to achieving sustained competitive advantage, is Knowledge Sharing (KS) (Alavi and Leidner, 2001; Gupta and Govindarajan, 2000; Nonaka and Takeuchi, 1995).

The literature on KM shows that factors affecting the behavior of knowledge sharing have been quite heavily investigated (Wasko and Faraj, 2000); however, most studies have focused either on social or the technological dimensions of KS deemphasizing the human aspect of KM and KS. Besides, the knowledge management literature, is dominated by research on competitive business organizations, especially profit making organizations, that create and apply new knowledge, supported through heavy investment in technology, and possibly related training (Hou et al., 2009). There are little studies on KM and KS research in HEIs (Cheng et al. (2009).

HEIs are bestowed with an important responsibility of managing knowledge production and distribution and while efficiently responding to the constantly changing environment. Thus, KS is inevitably a challenging and an important task for members of HIEs engaged in knowledge work. Cheng et al. (2009) assert that whilst studies in KS are important for a knowledge-based institution such as a university, such studies are minimal in number in the area. A possible reason for this dearth of research focus on KS in academic settings could be that often times KM initiatives in education focus on approaches that aim at supporting students' education, like designing and implementing e-Learning initiatives; and not particularly on the flow of knowledge amongst faculty. Besides, in the university system, research and publication outputs are the key measures of the reputation of the individual staff; and the benefit of the associated incentives. Opportunities to participate in the further creation and sharing of knowledge depends significantly upon the individual's performance. Although institutional mechanisms that support such efforts are important, research is more of an individual effort and often research outputs are amalgamated individual tasks.

The dearth of research on KM is more pronounced in HEIs of developing nations, where there is a low level of research output. A recent World Bank report (Salmi, 2009) shows that in the year 2005, only 3563 (2.7%) of the scientific publications from around the world are from Sub-Saharan Africa (2009:56). Thus, by focusing on KS in Ethiopia, this study aims to examine individual factors that determine KS practices. The unit of analysis for the study is the individual in HEIs, as seen in the process of undertaking and disseminating individual and collaborative research; and how knowledge is shared as it is influenced by individual factors. This research involves a survey-based empirical research to accomplish its objectives. Graphical representation and statistical analyses has been used to empirically investigate KS practices in Ethiopian universities followed by development and validation of instrument through various tests. The study will contribute to our understanding of the extent to which individual factors determine KS behaviors and the challenges of implementing successful KM practices in the context of developing countries. In addition to developing a validated

and reliable instrument to measure KS, it evaluates behaviors and competencies in the African context and contributes valuable input to the development of theory and practice of KM.

2. Study Context and Research Questions

With the objective of increasing access to tertiary education and producing high level educated personnel, the number of HEIs in Ethiopia has increased significantly since the mid 90s (Federal Ministry of Education 2010) and is still in the process of expansion. Increasing student enrollment, however, has placed huge teaching demands on academics, in terms of person-hours they spend in teaching. Moreover, lack of understanding of how best to share knowledge, we would argue, has adversely affected faculty's tendency to engage in research activities; as a result of which professors are now more inclined to give service to the overwhelming student population, when possible by earning additional income from teaching extra hours (Asgedom, 2007). Asgedom's (2000) analysis of research authorship also had revealed that there was poor cooperative effort among researchers and that women's participation was minimal. Generally, research output in terms of publications (books, reviewed journals), engagement in research projects, and the culture and competence to create and hold venues for intellectual debate and discussions has not generally flourished (Asgedom, 2007). On the whole, the poor incentive system for research, the inadequate orientation for problem-based research collaboration, the preferred engagement of the academics for teaching rather than research and the general weak knowledge infrastructure (Teferra, 2001, 2004) that supports scientific exploration are attributed as major limitations of the system that constrain the conduct of research as has been reported by the World Bank tertiary education report on Sub-Saharan countries (2009).

While there have been KS practices among faculty in many of HEIs in Africa, there are no comprehensive studies that show the degree and patterns of sharing and the individual factors that determine KS. In addition, the few studies on KS in Ethiopia (Asgedom, 2007; Asegedom, 2000; Duferra, 2004, Kasa, 2006) attribute limitations mainly to institutional factors that hinder faculty engagement in research. However, examining individual factors on faculty KS practices is also an unattended area of study and a fundamental step in understanding the challenges and opportunities of knowledge creation and dissemination.

The scope of this study builds upon the Theory of Planned Behavior (TPB) (Fishbein and Ajzen, 1975; Ajzen1991 and Ajzen, 2001) and considers individual factors that determine the sharing of knowledge among faculty during the process of conducting and disseminating research. Thus, it enquires if the theory of TPB adequately predicts knowledge sharing behaviors of academics in the Ethiopian HE context:

1. How do the antecedents and determinants of Knowledge Sharing Behavior (KSB) predict individual faculty's knowledge sharing practices in public HEIs in Ethiopia?
   - Does intention towards knowledge sharing predict faculty's KSB?
   - Does attitude towards knowledge sharing predict faculty's intention to share knowledge?
   - Does subjective norm towards knowledge sharing predict faculty's intention to share knowledge?
   - Does perceived behavioral control over knowledge sharing predict faculty's intention to share knowledge?
   - Does perceived behavioral control towards knowledge sharing predict faculty's KSB?
2. How do personal beliefs affect faculty's attitude towards knowledge sharing?
   - Do anticipated extrinsic rewards predict faculty's attitude towards knowledge sharing?
   - Do anticipated intrinsic rewards predict faculty's attitude towards knowledge sharing?
   - Does inter-organizational trust predict faculty's attitude towards knowledge sharing?

3. Theoretical Framing and Development of Research Model

Sharrat and Usoro (2003) contend that in order for organizations to fully leverage their knowledge-based assets, they must first understand factors that affect KS at individual level. One such theoretical framework that considers individual-level antecedents of human behavior is the Theory of Planned Behavior (TPB). Thus, to explore empirically the antecedents and determinants of individual academic's KS practice; this research used the theory of Planned Behavior (TPB) developed by Ajzen (in Fishbien and Ajzen 1975). TPB has received a great deal of attention in social cognition models as it identifies the antecedents of *attitude*, *subjective norms*, and *perceived behavioral control* and the corresponding beliefs reflecting the underlying cognitive structure, and it specifies the role of behavioral interventions (Ajzen, 1991).

The dependent variable, *KSB*, is conceptualized as 'an observable sharing of one's knowledge' (Hansen and Avital, 2005: 2) in academic and research settings. Prior to the conduct of the survey, preliminary visits to few universities, helped contextually conceptualize this construct in comparison to what is available in the extant literature. Other constructs used in the study, along with their hypothesized relationships, are described as follows:

3.1 Intention Predicting Knowledge Sharing Behavior (KSB)

According to the TPB, *intentions* are understood to capture the motivational factors that influence behavior; they are "indications of how hard people are willing to try or how much of an effort they are planning to exert, in order to perform the behavior" (Ajzen, 1991:page 181). Thus, the probability that an individual will engage in KS may be taken as her intention to share knowledge. Indeed, since much human behavior in general are under volitional control, the best predictor of an individual's behavior will be her intention to perform the behavior (Ajzen 1991) and KS behavior is no different. Thus, it is hypothesized as follows:

> **Hypothesis 1:** Strong intention to engage in knowledge sharing behavior positively correlates with knowledge sharing behavior.

3.2 The relationship of attitude to intention to sharing knowledge

According to the TPB, attitude towards KS refers to the individual's opinion that conducting KS is good or bad; that she is in favor of or against KS. According to Chen and Liu (2004), and Kuo and Young
(2008), attitude is the main factor influencing behavioral intention and can be used to predict intention (Bock and Kim 2002). Therefore, it is hypothesized as follows:

> **Hypothesis 2:** A positive attitude towards knowledge sharing positively correlates with the individual's intention to share knowledge.

3.3 The relationship of Perceived Behavior Control (PBC) over sharing to intention to share and towards KSB

The theory further assumes that perceived behavioral control has motivational repercussions on behavioral intentions. In other words, people who consider that they have resources and opportunities are likely to form strong behavioral intentions towards performing the desired behavior. It is also assumed that there is possibility of a direct link between perceived behavioral control and behavior. Thus, perceived behavioral control can also influence behavior indirectly via behavioral intentions (Ajzen, 1991). Based on this, the following hypotheses are made:

> **Hypothesis 3:** There is significant and positive relationship between PBC and intention to
share knowledge.
> **Hypothesis 4:** There is significant and positive relationship between PBC and KSB.

3.4 The relationship of Subjective norms to Intention to KS

Subjective norm reflects the person's perception that others desire "the performance or non-performance of a specific behavior" (Fishbein and Ajzen, 1975: 57), i.e. they are in favor of or in opposition to her performance of the behavior. It is defined as "a specific behavioral prescription attributed to a generalized social agent" (*Ibid*). Norms are typically understood as patterns of behavior

that become accepted as ways that people ought to behave. Subjective norms, however, refer to the person's perception of others' thinking regarding the behavior in question. In forming a subjective norm about KS, a person considers whether specific groups or the whole organization agrees that KS behavior is desired and valued (Lin and Lee, 2004). Hence, Ajzen (1991) posits that as the positive support received by individuals from other persons or organizations important to them becomes greater, their attitude also becomes more positive. Thus, it is hypothesized as follows:

Hypothesis 5: Faculty's strong subjective norm about knowledge sharing positively predicts their   intention to share knowledge.

Furthermore, this research tries to reinforce the TPB model by building on Chen and Liu's (2004) recognition that attitude is the main factor influencing behavioral intentions. Therefore, based on a review and synthesis of the extant literature (Bock et al., 2005; Kankahalli et al.,2005; and Kuo and Young, 2008), we propose three categories of a*ttitude* antecedents: (1)Trust, (2) Extrinsic reward, and (3) Intrinsic rewards to further strengthen the study of KSB, as discussed below (See Figure 1).

3.5 The Relationship between Trust and Attitude towards KSB

What makes individuals think that sharing is important and valuable is reflected in the attitude they develop towards the act which is a resultant effect of both their own personal disposition towards the act as well as influences of the external environment. Thus, following the TPB framework, this research theorizes that attitude to share knowledge is a function of the individuals' trust in the working environment and the anticipated reward that the sharing act provides. It is generally believed that when there are trust-relationships, people are more willing to provide useful knowledge. Also, when trust exists, people are more willing to listen and absorb each other's knowledge and ideas (e.g., Andrews and Delahey, 2000). Chen et al (2009:292) in fact do argue that trust is the pivotal construct in KS behavior. Therefore, from this review of literature, trust can be expected to positively predict KS.

Hypothesis 6: The higher the level of trust a faculty has to her colleagues, the higher the positive   attitude towards knowledge sharing is.

3.6 The Relationship of Extrinsic and Intrinsic Rewards to Attitude

It has been discussed that the appropriate incentives and motivators will likely affect the behavior and intention of members in knowledge sharing (Wasko and Faraj, 2005; Sharratt & Usoro, 2003). Rewards could be intrinsic or extrinsic. Hass et al refer to various works to define extrinsic reward as "the the degree to which one believes that one will receive extrinsic incentives for one's knowledge sharing" (Hass et al 2009:6). Numerous studies argued that the presence of a reward system is critical for the success of knowledge sharing in an organization. For example, Bartol and Srivastava (2002) found a positive relationship between monetary rewards and knowledge sharing. However, the published findings, from empirical studies, on the use of extrinsic rewards to evoke the desired behaviour seem to be mixed. While some studies have found them to be successful (Bock et al, 2005 and Kim and Lee, 2006), there exists literature citing the ineffectiveness of extrinsic rewards and emphasizing the importance of intrinsic incentives in inducing KS behaviours (Bock and Kim, 2002).

Wasko and Faraj (2005) showed that employees are intrinsically motivated to contribute knowledge because engaging in intellectual pursuits and solving problems is challenging or pleasurable, thereby augmenting the individual's sense of self-worth, and because they enjoy helping others. Knowledge sharing also contains an element of reciprocity. Wasko and Faraj, in their study of KS in electronic networks (2005, 43), claim that "when there is a strong norm of reciprocity in the collective, individuals trust that their knowledge contribution efforts will be reciprocated, thereby rewarding individual efforts and ensuring ongoing contribution ." This makes knowledge sharing different from information sharing. Whereas knowledge sharing contains elements of reciprocity, information sharing is about the management making information available to all members of the organization and it could be unidirectional and unrequested.

Thus, the following hypotheses are made:

Hypothesis 7: Extrinsic motivators to sharing knowledge positively predict attitude towards knowledge sharing.

Hypothesis 8: Intrinsic motivators to sharing knowledge (*Anticipate reciprocity*, Sense of self- worth and Enjoyment in helping others) positively predict *attitude* towards knowledge sharing.

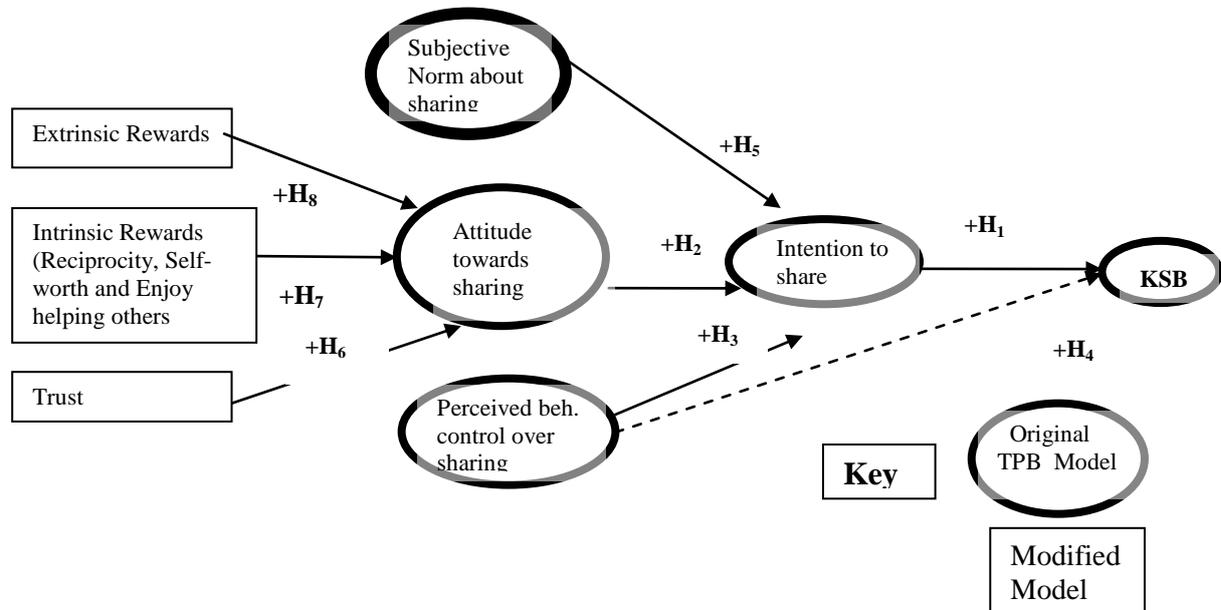The following figure represents the research model adopted for this study:

Figure 1.   Proposed research model

4. Research Method
4.1 Survey Instrument and Data Collection
Empirical research on KS is still in development (Bock and Kim, 2002, Kuo and Young, 2008) and there are no well-established scales for some of the proposed constructs in this study. Thus, in order to test the hypotheses identified in the previous section, the study resorted to developing a survey instrument that used a combination of established scales and items from the extant literature (Hass et al, 2009; Chen et al. 2009; Lin 2006; Lu et al 2006; Hansen and Avital, 2005; Lin and Lee 2004; and Ryu et al 2003), but largely from the work of Bock et al (2005).

The self-administered questionnaire, which had 48 items was prepared in English (English being the medium of instruction in higher education) and each item was rated on a five-point Likert scale, ranging from 'strongly disagree - somewhat agree - to strongly agree'. The dependent variable, KSB, has 12 items that measure academics' behavior of sharing, adopted from Jungnickel (1997) for which respondents were required to show the degree of behavior on a five-point Likert scale, ranging from 'never - sometimes - always'. The questionnaire was piloted to ensure that the wording, format, and sequencing of questions were appropriate.

4.2 The Sampling Frame
At the preliminary stage, to obtain a valid judgment of the general scenario of research and KS among academics of HEIs, we visited Research and Graduate Program offices of 3 universities– Addis Ababa University, Bahir Dar University and St. Mary's University. These visits yielded access to relevant documents; and the informal discussions held with relevant individuals helped to create a deeper understanding of the local knowledge production and sharing processes.

Information obtained from these preliminary visits helped decide on which universities to consider as sample cases. The main criterion of selection was purposive, related to having a relatively established practice of knowledge creation and dissemination as demonstrated through availability and strength of graduate programs, research undertakings, individually or in teams; availability of research projects with external bodies (external to the institution or to the country); availability and frequency of organization of colloquia(seminars and workshops) for exchange of research ideas; and continuous publication of research outcomes in journals and proceedings. Therefore, out of the 32 public universities in the country, 8 were purposely selected due to their comparative maturity and the subsequent experience they have developed over the years.

The questionnaire was administered to all faculty above the rank of lecturer, in selected departments, to form samples of clusters from every college at a confidence level of 95% and confidence interval of 5% (Cohen et al, 2000). Thus, of a total population of 1,312 in the 8 sample universities, 1,094 were selected as sample respondents. Finally, 610 usable questionnaires were collected with a response rate of 56%. Such a significant response was possible due to the employment of research assistants, who were involved in the distribution and collection of the questionnaire to individual sample faculty, personally, at each university.

5. Analysis and Results

Out of the 610 respondents, 29% are from colleges of health and medicine; 26% are from natural sciences; and 25% are from agriculture. Most of the respondents have up to 10 years (66.8%) of job experience. Considering their distribution by rank, majority are lecturers (71%); and only 4.3% are full professors. Gender wise, females represent 20.3% of the respondents while males make up the remaining 79.6%.

The Partial Least Squares (PLS) technique, the Smart-PLS 2.0 software, was used to evaluate the proposed theoretical model. This choice was due to the nature of the study and complexity of the model (Hair 2010, Andreev 2009;Gefen et al. 2000 and Chin 1998). The finally refined model used for this study (See Fig. 2 in Appendix A) has 12 constructs out of which 5 are reflective and the other 7 are formative. The dependent variable (KSB), which has 12 items, was decomposed into 3 sub-constructs - Scholarly Activity(SA), Collaborative Activity (CoA) and Use of Resource (URes).

5.1 Measurement Model

In the measurement model, the evaluation of the reflective and formative constructs was done differently. Constructs with reflective measures were assessed in terms of indicators' internal consistency reliability, convergent and discriminant validity. And formative measures were assessed through indicator validity, multi-collinearity and construct validity.

Since Cronbach alpha may over or under-estimate scale reliability, composite reliability is often used as a preferred alternative to measure reliability (Henseler et al, 2009); and thus, composite reliability for all constructs in this model showed values above the benchmark (o.8). Furthermore, a higher degree of discriminant validity was signified through cross loadings results which showed that all items were loading higher on their designated construct than other constructs (Chin, 1998); and, the AVE of each construct was greater than the LV's highest squared correlations with any other LV (Gefen and Straub, 2005).

A major examination of the validity of formative indicators was believed to be the theoretical and expert opinion used to ensure relevance and the content validity of the constructs (Straub et al 2004). In addition, measures of VIF were all below 3.3 (Peter et al 2007) showing absence of multi-collinearity among indicators of formative constructs. For formative items, the magnitude and significance of the weight indicated the contribution of the associated latent variable. Three indicators - using e-mail to share information and knowledge, sharing of resources with colleagues and supporting junior staff in their researching efforts - were by far the most important in forming the dependent variable - KSB. However, most of the indicators for CoA (Collaborative Activity) and

Scholarly Activity (SA) were not significant. But, following Chin's recommendation (1998), these items were retained in the model.

5.2 Structural Model

The statistical significance of the structural model was assessed by using bootstrapping procedures with 200 samples replacement. Since the primary objective of PLS is prediction, the goodness of a theoretical model is established by the strength of each structural path and the combined productiveness (R^2) of its exogenous constructs (Chin 1998). R^2 for all the 3 sub-constructs of the final DV (CoA = 0.072; SA = 0.033 and SRes = 0.156) showed weak explained variance (Chin 1998). However, R^2 was moderate (0.358) for intention and higher for attitude (0.535). Besides, the t-value of path coefficients showed that all the LVs, except two (ARp to Att. and EH to Att.), have significant hypothesized relation among themselves [at least t>1.96 in order to meet .050 significance level (Chin 1998)]. It also appears that three of the paths - Trust to Attitude, Trust to Subjective Norm and Intention to Collaborative Activity, have the strongest paths of all. In contrast, the weakest paths are between PBC to Intention, Attitude to Intention and AER to Intention (negatively significant). This supports the overall assessment of the structural model as an acceptable representation of the observed sample data.

The effect size is one of the measures used to estimates the strength of the relationship between independent and dependent variables in a statistical sense (Chin 1998; Henseler et al.,, 2009; and Hair et al., 2010). To examine effect size, we have measured the f^2 for each endogenous construct following Cohen's method (Cohen 1988 in Hair et al 2010). The results showed that all of the latent constructs contribute to the original model at different levels, from $f^2 = 2\%$ (ARp) to $f^2 = 24.3\%$ (Trust) where ($f^2>0$). The f^2 values suggest that the unexplained variance of the partial model is significant at different levels for particularly two endogenous variables (Attitude and SN), as impacted by Trust, suggesting the importance of the later to the total explained variance.

Results of path analysis for which the parameters were obtained by extracting *T Statistics* values from the *Path Coefficients* table [(at least t>1.96) in order to meet .050 significance level (Chin 1998)], showed that Hypotheses H4, H5, H6, and H7 are confirmed by the model. PBC is positively and moderately associated with all forms of KSB, and particularly significantly with collaborative activity (t= 4.5720) and sharing of resources (t=4.8552). Subjective norm (with t=5.2453) can affect intention; and trust (with t= 7.8268) is strongly associated with attitude to share. However, Anticipated Extrinsic Rewards (AER) significantly and negatively (t= 2.6966 and β = -0.0916) affect attitude. It was also evident from the analysis, that H2 and H3 are not supported - neither attitude nor PBC affect intention to share. In addition, intention is associated with 2 of the 3 decomposed sub-constructs of KSB, namely SA and CoA (t = 4.1064 and t = 5.3064 respectively). Except for feeling of self-worth (β = 0.222, t = 3.957), neither of the other variables of intrinsic reward (ARp and EH) are associated with attitude. Therefore, H1 and H8 are partially confirmed by the model (See Table 1 in Appendix B).

6. Summary of Findings and Conclusion

This paper has tried to offer extension to the TPB model to explain the possible determinants of knowledge sharing among faculty of universities in Ethiopia. Assessments of the predictive ability of attitude, norm and behavioral control on intention to share and later on to the behavior of sharing itself was made through the Smart-PLS tool. In Partial Least Squares (PLS) method, structural model and hypothesis were tested by computing path coefficients (β). Evaluation of the statistical significance of each path coefficient, showed that of the initially hypothesized 14 paths, 9 of them have a statistically significant impact on KSB, with Trust having the highest impact on Attitude. This was in line with has been found out by Chen et al (2008) and Andrews and Delahay (2000). In a working environment where trust exists, the tendency to be willing to exchange each other's ideas and knowledge is likely to be high. However, the same path for Anticipated Extrinsic Rewards (AER) is negatively significant depicting the adverse relationship AER has with attitude to share, as has been found out by Wasko and Faraj (2005). In the case of the study by Hass et al, (2009), in fact, their hypothesis that extrinsic rewards encourage sharing was rejected. Wasko and Faraj (2005) also

highlighted intrinsic factors as keys to improving an individual's attitude towards sharing and therefore attitude; however, in this study it was seen that only sense of self worth has impact on attitude - in contrast to Hass et al (2009) who found out that the feeling of self-worth didn't impact on attitude to share.

In addition, of the three predictors of Intention: Attitude, SN and PBC, it was only SN that showed a significant path relationship. In the modified theory of planned behavior model proposed by Ryu et al. (2003), subjective norms were found to have the strongest total effect on behavioral intentions to share. In this model too, it was also evident that even the unhypothesized path between SN and attitude was also significant indicating the contingency between norm and intention as well as attitude to share. It appears that context plays a pivotal role in one's behavior of sharing. It was also found out that Intention could predict 2 of the 3 decomposed sub-constructs of KSB, namely *SA* and *CoA*. In line with the Theory of Planned Behavior and also what has been found out by Bock et al., (2005) and Lin and Lee (2004), in this study too, PBC predicts the overt behavior of sharing, and not through intentions. TPB takes into account that some, but not all, behavior is under volitional control. The significant relationship of Behavior Control (PBC) with all the sub-constructs of *KSB* shows the strong impact that *PBC* has on *KSB*.

Indeed, much remains to be done to understand individual behaviors in sharing knowledge. This study has been limited from further investigating into variations caused by heterogeneity of macro-contextual factors that potentially generate different dynamics in the sharing of academic knowledge. However, by developing an instrument to be applied in a context where research on such a theme has not been conducted, we have offered an agenda for future research. Moreover, we suggest that the framework provided here is an early step in understanding the practice of knowledge sharing in HEIs. Further studies can also look into further validation of the instrument and consider the effects of specific demographic factors, like age, gender, and area of discipline of faculty on knowledge sharing behavior.

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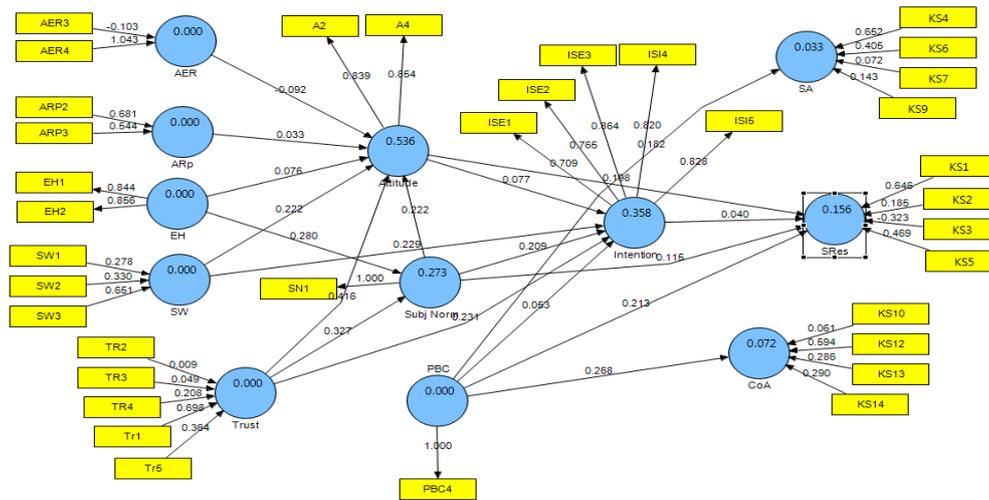
Appendix A

Figure 2: PLS Algorithm Measurements

Appendix B

Path	Orig. Sample	T-Statistics	Hypothesis	Supported?
*Intention -> CoA	0.2213	5.3064	Hyp. 1a	**Yes**
*Intention -> SA	0.1909	4.1064	Hyp. 1b	**Yes**
*Intention -> SRes	0.0395	0.7213	Hyp. 1c	**No**
Attitude -> Intention	0.0762	1.3943	Hyp. 2	**No**
PBC -> Intention	0.0555	1.7755	Hyp. 3	**No**
*PBC -> CoA	0.2237	4.5720	Hyp. 4a	**Yes**
*PBC -> SA	0.1333	2.4600	Hyp.4b	**Yes**
*PBC -> SRes	0.2127	4.8552	Hyp. 4c	**Yes**
SN -> Intention	0.2091	5.2453	Hyp. 5	**Yes**
Trust -> Attitude	0.4154	7.8268	Hyp. 6	**Yes**
AER -> Attitude	-0.0916	2.6966	Hyp. 7	Yes, in opposite direction
ARp -> Attitude	0.0330	0.6616	Hyp. 8a	No
EH -> Attitude	0.0766	1.4000	Hyp.8b	No
SW -> Attitude	0.2219	3.9564	Hyp. 8c	Yes
EH -> SN	0.2797	5.8077	Unhypothesized	Yes
SW -> Intention	0.2281	5.4288	Unhypothesized	Yes
SN -> Attitude	0.2221	5.4541	Unhypothesized	Yes
Trust -> Intention	0.2302	4.9513	Unhypothesized	Yes
Trust -> SN	0.3270	7.1314	Unhypothesized	Yes

* The DV, KSB, is decomposed into 3 sub-constructs

Table 1-   Results of hypotheses testing