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## Intrinsic and Extrinsic Motivation in Knowledge Sharing

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### Article Information

*Article History:*  
Received April 2022  
Revised April 2022  
Accepted June 2022

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#### Keywords:

**Knowledge Sharing,  
Knowledge Sharing Inten-  
tions, Extrinsic Motiva-  
tion, Intrinsic Motivation**

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### Abstract

Knowledge sharing is vital in the formation of organizational competitive advantage. This study examine the role of motivation in knowledge sharing. Motivation in this study is divided into two, namely intrinsic motivation and extrinsic motivation. Both mechanisms are explained through Self Determination Theory and Theory Reason Action . Knowledge sharing intention is used to explain the mechanism of motivational influence on knowledge sharing. The results of hypothesis testing indicate that intrinsic motivation has a positive effect on knowledge sharing behavior mediated by knowledge sharing intentions, while extrinsic motivation has no effect on knowledge sharing behavior.

## INTRODUCTION

Knowledge management is one of the studies that has received much attention recently (Antunes & Pinheiro, 2020; Ode & Ayavoo, 2020; Pellegrini et al., 2020). In today's digital era, knowledge is the key to winning the competition (Abbas, 2020). Shahzad et al., (2020) define knowledge as an intangible and immutable asset that organizations use as an organizational competitive instrument in an efficient manner. Knowledge exists at every level in the organization, at individuals, groups or at the organizational level (Ipe, 2003). Therefore, knowledge is not easily imitated and provides an advantage for the organization.

A previous study has shown that knowledge has a positive effect on organizational performance (Li et al., 2020; Muhammed & Zaim, 2020). To turn knowledge into a competitive resource, and appropriate utilization strategy is needed, one of which is knowledge sharing. However, sharing knowledge is a difficult thing to do in organizations (Muafi, 2020). A person may wish to use his knowledge for his own benefit. This will make it difficult for the company to do collaboration and the company's goals will

be difficult to achieve. Therefore, the antecedents of knowledge sharing need attention in order to increase the sharing of knowledge.

Knowledge sharing is defined as a process in which the knowledge possessed by individuals is transformed into a form that can be understood, absorbed, and used by other individuals (Ipe, 2003). Bartol & Srivastava (2002) mention knowledge sharing as the behavior of individuals who share relevant information, ideas, suggestions and expertise with others (individuals). Knowledge sharing can occur vertically and horizontally (Muhammed & Zaim, 2020), vertical means that it occurs between individuals and groups or organizations, horizontal means that it occurs among individuals in the organization.

Hung et al., (2011) reported that the motive for sharing knowledge consists of intrinsic (altruism) and extrinsic (reward, reputation and reciprocity), results shows that economic rewards do not affect knowledge sharing, reputation has a significant effect on knowledge sharing, and reciprocity does not affect knowledge sharing. (Lin, 2007) also examined intrinsic and extrinsic factors that affect knowledge sharing. The intrinsic factors studied in this study were knowledge self-efficacy, and enjoyment helping others. Extrinsic

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factors in this study are rewards and reciprocal benefits. Three motivational factors (reciprocal benefits, knowledge self-efficacy, and pleasure in helping others) significantly influence knowledge sharing. However, rewards do not affect the attitudes and behavioral intentions of employees about sharing knowledge.

Research conducted by Youssef et al., (2017) shows that rewards have a positive effect on knowledge sharing. This study also shows that trust and support from organizational management affect knowledge sharing. The meta-analysis conducted by Witherspoon et al., (2013) shows that the antecedents of knowledge sharing are divided into three categories, namely intentions and attitudes, organizational culture, and rewards. Intrinsic factors that influence knowledge sharing are very diverse in several studies, including enjoyment of helping others (Olatokun & Nwafor, 2012), altruism (Hung et al., 2011), interrelationships, and individual reputation (Lin, 2007; Mojdeh et al., 2018) and knowledge self-efficacy (Lin, 2007) as one of the most frequently studied as intrinsic motives. Extrinsic factors that are often associated with knowledge sharing are rewards (Hung et al., 2011; Lin, 2007; Salameh & Zamil, 2020; Wang & Hou, 2015; Youssef et al., 2017) and reciprocal benefits (Hung et al., 2011; Lin, 2007; Rode, 2016).

This study promotes the enjoyment of helping others as an intrinsic motive because it is considered to be appropriate in the Indonesian context. Michailova & Hutchings, (2006) state that individual behavior is embedded in the broader national cultural context. In other words, national culture can shape individual behavior or attitudes. Indonesia is known as a country characterized by close relationships between individuals. This allows the intrinsic motivation of the enjoyment of helping others to be important and appropriate for this research. While the extrinsic factor that will be tested in this study is the reward. The mechanism of intrinsic and extrinsic motives can be explained through the mediation of knowledge-sharing intentions. The intention is an important thing that is often missed in several studies related to knowledge sharing. The intention of sharing knowledge is believed to be able to answer the inconsistency of the research stated above. Knowledge sharing intention is the extent to which knowledge will be shared by both individuals and management (Witherspoon et al., 2013). Research conducted by Reyhach & Weisberg (2010) shows that the intention of sharing knowledge has a positive effect on the realization of knowledge sharing.

This study used Self Determination Theory (SDT) to explain the influence of intrinsic and extrinsic motives on knowledge sharing. The essence of SDT is that individuals can be motivated to perform certain behaviors both externally

(i.e., controlled motivation) and internally (i.e., autonomous motivation) (Wang & Hou, 2015). For this reason, SDT can be used as a theory to explain the influence of intrinsic and extrinsic motives on knowledge sharing. However, the theory is not actively used in research related to knowledge-sharing motives (Yoon & Rolland, 2012). Meanwhile, the mediating effect of knowledge-sharing intentions can be explained by using Theory Reason Action (TRA). TRA argues that social behavior is influenced by beliefs, attitudes, and intentions (Lin, 2007). So it can be said that the intention is the basis for the occurrence of a certain behavior.

## LITERATURE REVIEW

Knowledge sharing is interpersonal communication that involves communicating and receiving knowledge from others, and one of the main ways to transfer knowledge is human interaction (Chen, 2007). Knowledge sharing occurs between individuals in a community, where individuals interact and share knowledge with other individuals through virtual or face-to-face spaces, groups, forums, and the like so that the unit of analysis in knowledge sharing is the individual. Lin (2007), states that knowledge sharing is a culture that involves social interaction where employees exchange knowledge, experience, and skills (skills) through all departments or organizations.

Hooff & Ridder (2004) state that there are two dimensions needed to carry out knowledge sharing, namely knowledge donation, and knowledge collection. Knowledge donating is the transfer of knowledge, which means exchanging and communicating with others with the intellectual capital of one's personality. Knowledge collection is collecting knowledge which refers to consultation with colleagues to encourage them to share their knowledge capital. Research conducted by Kim & Shim (2018) shows that knowledge sharing has a positive effect on performance through innovation. Similar results are shown by research conducted by Soto-Acosta et al., (2017) which states that knowledge sharing has a positive effect on innovation. Recent research by Arsan et al., (2022) shows that knowledge sharing not only has a positive effect on organizational innovation but also affects its competitive advantage. The main purpose of the implementation of knowledge management is to increase knowledge sharing among users and employees in the organization (Hwang et al., 2018). Therefore, it is important to pay attention to knowledge sharing in the organization.

The concept of enjoyment in helping others comes from Lin's concept of altruism (2007). Wasko & Faraj (2000) states that employees are intrinsically motivated to share knowledge because being involved in solving problems

is challenging or fun and because they like to help others. Enjoyment helping others has been shown to affect knowledge sharing in previous studies (Lin, 2007; Olatokun & Nwafor, 2012). Research conducted by Lin (2007) shows that enjoyment helping others as an intrinsic motivation for knowledge sharing. Yu et al., (2010) revealed that helpful behavior (knowledge sharing) can increase value, group cohesiveness, and a sense of team ownership, all of which can improve work performance and help virtual communities to attract and retain better members.

Podrug et al., (2017) divides the factors that influence the sharing of knowledge into three levels. Enjoyment helping others is an individual factor that influences knowledge sharing. Management support is an organizational factor that affects knowledge sharing. And ICT as a technological factor that affects knowledge sharing. The results of these studies indicate that all factors above have an effect on knowledge sharing. People help others because they derive intrinsic pleasure from helping others (Chennamaneni, 2007), which make them feel proud and feel their own pleasure. Hence, the pleasure of helping others is believed to increase knowledge sharing. Therefore, the first hypothesis proposed in this study is:

H1: Intrinsic motivation, enjoyment helping others, has a positive effect on knowledge sharing

Rewards could be monetary incentives such as bonuses and non-monetary such as praise and public recognition that do not have an equivalent monetary value (Bartol & Srivastava, 2002). Rewards can be used by organizational management to influence individual behavior. Therefore, reward is seen as one of the factors that motivate employee behavior. Some previous studies found that rewards have a positive effect on knowledge sharing (Wang & Hou, 2015; Youssef et al., 2017). However, research by Lin (2007), Olatokun & Nwafor (2012), and Salameh & Zamil (2020) shows that rewards have no effect on knowledge sharing. Therefore, we see this as something interesting that needs to be clarified through this study. In accordance with Self Determination Theory (SDT), reward is a form of extrinsic motivation. Self Determination Theory (SDT) was first introduced by Deci & Ryan (1985). This theory relates to the determination of individual behavior without external influence or interference (Yoon & Rolland, 2012). Self Determination Theory (SDT) is a theory of motivation and human personality that is derived empirically in a social context that distinguishes motivation to be autonomous and controlled (Deci & Ryan, 1985) SDT proposes that human behavior can be driven not only by externally induced incentives, called controlled motivation, but also by internally generated incentives, known as

autonomous motivations (Wang & Hou, 2015). According to this theory, a person will be moved to do something when his motivation is fulfilled. Therefore, rewards are considered a driving force that can encourage knowledge sharing. Based on this explanation, the second hypothesis proposed in this study is:

H2: Reward extrinsic motivation has a positive effect on knowledge sharing

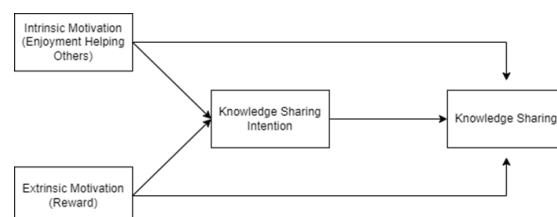
Intentions and behavior are different aspects of functional relationships that are separated in time (Bandura, 1999). Intention is the extent to which a person has a conscious plan to engage in a behavior (Castaneda et al., 2016). Attitude towards knowledge sharing refers to how much a person's ability to share knowledge (Zhang & Ng, 2013). Lin (2007) states that knowledge sharing intention is the extent to which employees are likely to share their knowledge with others.

Previous study indicates that individuals' feelings of sharing knowledge reflect their readiness whether they want to be involved in the knowledge sharing process (Jolaei et al., 2014). Zhang & Ng (2013) divided the antecedents of knowledge sharing intentions into three categories, namely behavioral beliefs, normative beliefs, and behavioral control beliefs. In his findings, behavioral beliefs including rewards have a positive effect on knowledge sharing intentions.

Research related to intrinsic and extrinsic motivation to share knowledge still finds inconsistent findings (Lin, 2007; Witherspoon et al., 2013). Therefore, it is necessary to explain the mechanism of the process of intrinsic and extrinsic motivation in influencing knowledge sharing. This study uses the intention of sharing knowledge as a mediating variable which is considered to explain the mechanism of the influence of intrinsic and extrinsic motivation on knowledge sharing. This is based on Theory Reasoned Action (TRA) which explains that individual behavior can be explained through beliefs, attitudes, and intentions (Youssef et al., 2017). It can be said that when the intention does not appear, the behavior will not occur. Therefore, the third and fourth hypotheses proposed in this study are:

H3: Knowledge sharing intention mediates the influence of intrinsic motivation, pleasure to help others, on knowledge sharing.

H4: Knowledge sharing intention mediates the effect of extrinsic reward motivation on knowledge sharing.



## METHOD

The sampling technique of this research is purposive sampling. The respondents of this study were employees who worked in startup companies in Indonesia. This is because startups are considered as a business field that is mostly engaged in IT and utilizes knowledge as a source of its business. Questionnaire was used to collect the data. The research hypothesis was tested using hierarchical regression analysis as suggested by Baron & Kenny (1986) to test the mediated hypothesis.

Enjoyment of helping others was measured using an instrument developed by McLure Wasko & Faraj (2000) with the example of the question "It feels good to help someone by sharing my knowledge". Reward is measured by an instrument developed by Davenport & Prusak (1998). An example of a question in a reward instrument is "I will receive a higher bonus in return for sharing my knowledge". Knowledge sharing instrument was developed by Lee (2001) with the example of the question "I share my work experience with my coworkers". Knowledge sharing intention instrument was developed by Bock et al., (2005) with the example of the question "If given the opportunity, I will share my work experience with my colleagues".

## RESULTS AND DISCUSSION

**Table 1.** Regression Analysis Result

MODEL	Variable	Knowledge Sharing Behavior			Knowledge Sharing Intention			
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
1	Gender Tenure	0.696 -0.074	0.735 0.084	0.761 0.061	1.025 0.19	-0.866	-0.758 -1.257	-1.395 -0.681
2	Enjoyment Others		0.340**	0.340**	0.162		0.924**	0.938*
3	Reward			-0.019	-0.106			0.461*
4	Knowledge Intention				0.189*			
R		0.016	0.073**	0.074	0.222*	0.063*	0.137*	0.26
ΔR		0.016	0.056**	0.001	0.148*	0.063*	0.074*	0.123

Model 2 in Table 1 shows that the intrinsic motivation of enjoyment to help others has a positive effect on knowledge sharing behavior ( $\beta=0.340$ ,  $p<0.05$ ). These results indicate that the first hypothesis which states that the intrinsic motivation of enjoyment helping others has a positive effect on knowledge sharing behavior is supported.

The second hypothesis states that extrinsic reward motivation has no effect on knowledge sharing behavior. Regression analysis shows an insignificant relationship between extrinsic reward motivation and knowledge sharing beha-

avior, thus the second hypothesis is not supported.

The third hypothesis states that the intention to share knowledge mediates the effect of intrinsic motivation on the enjoyment of helping others on knowledge sharing. The results show that the independent variable becomes insignificant when it is regressed together with the mediating variable, therefore it is fully mediated ( $\beta=0.189$ ,  $p<0.01$ ). Therefore the third hypothesis is supported.

The fourth hypothesis states that knowledge sharing intentions mediate the effect of extrinsic reward motivation on knowledge sharing. To test mediation, the first step is to test the independent variable against the dependent variable. The results of the analysis show that extrinsic motivation has no effect on knowledge sharing behavior. Thus, the moderating variable cannot be tested because it does not meet the test requirements in the first step. Therefore, the fourth hypothesis is not supported.

Based on the results above, it was found that the intrinsic motivation of enjoyment helping others has a positive effect on sharing knowledge. This result inline with previous study by Moghavvemi et al., (2017) and Nguyen et al., (2019). These results indicate that the more someone feels happy to help others, the more motivated they are to share knowledge. Indonesia is known as a collectivist country, this represents a high closeness and togetherness between individuals. Helping others is one form of real collectivism in the organization.

The second hypothesis found that extrinsic reward motivation has no effect on knowledge sharing. Similar results are shown by research conducted by Sulistiyani et al., (2018). The role of rewards in knowledge sharing is indirect (Bartol & Srivastava, 2002). Rewards are able to influence knowledge sharing through a mechanism of trust that is built between individuals in the organization. Christensen (2011) states that monetary rewards do not always have a positive impact on knowledge sharing. Furthermore, pre-

vious research has shown that monetary rewards can have a negative impact (Bock et al., 2005). Huysman & de Wit (2004) explain that monetary rewards only have a short-term impact on the organization.

The third hypothesis found that the intention to share knowledge fully mediates the influence of intrinsic motivation, enjoyment helping others, on sharing knowledge. These findings prove that the intention of sharing knowledge is important in the mechanism of knowledge sharing behavior. Someone who likes to help others will be moved to help others, it shows that there is a desire or intention before the knowledge sharing behavior is formed. This finding also confirms that Theory Reasoned Action plays a role in the third hypothesis.

Hale et al., (2012) explain the mechanism of Theory Reasoned Action that what encourages a person to behave is behavioral intention, that consists of individual influence and subjective norm. Individual influence is individual behavior toward volitional behavior or desired behavior. The individual's influence on the desired behavior is an important part of the hypothesis.

Someone who likes to help others will tend to do helpful behavior, in this case is sharing knowledge. While subjective norms consist of normative beliefs and motivation to carry out those normative beliefs. Subjective norms are perceptions of expectations for the desired behavior. As a colleague in an organization, the prevailing subjective norm is that someone will be willing to provide information for them. These conditions encourage the intention to share knowledge within the company. As a result, individual influences and subjective norms encourage knowledge sharing intentions which will become the embryo of knowledge sharing behavior.

The final hypothesis found that knowledge sharing intentions did not mediate the effect of extrinsic reward motivation on knowledge sharing. Theory Reasoned Action contains two important things as described above (the influence of individuals and subjective norms). Individuals who make extrinsic reward motivation their focus may be motivated to share knowledge because there are rewards when someone does this. However, the second aspect, subjective norms, as someone who is part of an organization then normatively that person must share information with or without rewards or rewards. This causes the second aspect of knowledge sharing to not be fulfilled.

## CONCLUSION AND RECOMMENDATION

This study highlights the motivational mechanism in sharing knowledge. The results show that intrinsic motivation and extrinsic motivation have different effects on knowledge sha-

ring. Intrinsic motivation has an important role in the organization, and therefore, practitioners need to consider it. Meanwhile, the results of testing on extrinsic motivation conclude that it is not the main thing in the knowledge sharing process. Organizations should be able to explore the motivations of individuals that encourage them to share their knowledge to maximize the knowledge transfer process. Theory Reasoned Action helps to explain that relationship. As proposed by this theory, influence of individuals and subjective norms have a great role in shaping sharing knowledge behavior.

This study uses Self Determination Theory (SDT) to explain the influence of intrinsic and extrinsic motives on knowledge sharing. Intrinsic and extrinsic motivation for sharing knowledge for someone from time to time will always develop so that future research is expected to be able to capture this phenomenon through further research. This study uses respondents from various fields to capture variations in data, further research is expected to provide an overview in certain fields to be able to see the impact of the variables studied more clearly.

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