Reinforcer Preferences of Liberty University Professors

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Acceptance of Senior Honors Thesis

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Abstract

Prior research in Organizational Behavior Management (OBM) has found positive reinforcement effective for increasing work performance when rewards are reinforcing to the individual. Research also supports the efficacy of stimulus preference assessments (SPAs) in identifying reinforcers. The purpose of this study was to identify reinforcers for faculty at Liberty University. The hypotheses were, in a sample of faculty in Liberty University's School of Behavioral Sciences (1) potential reinforcers other than monetary reinforcers will be identified as high-preference items and (2) tangible items will be identified as low-preference items. Hypotheses were tested using an online survey with Likert scales and written response. The author concluded that the hypotheses were supported. Personal recognition and intentionality were also found to be highly valued.

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Literature Review

Reinforcement

Since the days of B. F. Skinner, reinforcement and its applications have been a major field of study in psychology. Reinforcement is defined by the outcomes of an intervention rather than the intention of that intervention. Specifically, reinforcement occurs when a target behavior increases in frequency, intensity, or latency (Miltenberger, 2016). There are several reasons an intervention may fail to change behavior in the desired manner including personal learning histories, contingency, and motivating operations (McGee & Johnson, 2015). Contingent delivery of reinforcers means "specified behaviors and results must occur under predefined circumstances and to predefined criteria" (McGee & Johnson, 2015, p. 18). Interventions done without contingency can not only fail to have the desired effect but can cause a decrease in motivation (McGee & Johnson, 2015).

Addressing Claims of Decrease in Intrinsic Motivation

This adverse outcome has led to a misconception that external rewards cause a decrease in intrinsic motivation known as the over justification effect. Claims that rewards diminish motivation have been refuted by McGee and Johnson (2015) who asserted that results depend on how rewards are delivered. These researchers explain that the experiments often cited as support for the over justification effect never tested rewards for reinforcement, documented long-term effects, delivered rewards contingently, or administered a survey to at least see if participants found the given rewards valuable (McGee & Johnson, 2015). This means that the evidence of risk in implementing reinforcement is weak. Even if decreases in intrinsic motivation were to result from reinforcement, there is no evidence to suggest that this effect would be long-lasting

or outweigh possible gains (McGee & Johnson, 2015). Settings like businesses may find that a temporary increase in productivity worth a temporary decrease in intrinsic motivation.

Regardless of changes in intrinsic motivation, measurable changes in behavior occur as a direct result of extrinsic motivation. Intrinsic motivation is largely outside of manager control so those creating the workplace environment must focus on extrinsic motivation to create the outcomes to meet organizational needs (McGee & Johnson, 2015).

Organizational Behavior Management

One area where reinforcement can be applied is organizations. According to McGee and Johnson (2015), Organizational Behavior Management (OBM) is "the application of the science of behavior or behavior analysis to the performance of people at work" (p. 15). Managers attempt to encourage the best work out of their employees through incentives and rewards – items that may or may not be reinforcing. After all, a behavioral definition of reinforcement demands that for an item to be deemed a reinforcer it must increase the likelihood that a person will engage in a specified target behavior in the future (Miltenberger, 2016). McGee and Johnson (2015) wrote, "it is the learned and conditioned types of motivating operations, especially those involved in social interactions, that are likely to be more relevant in workplace settings" (p. 17). Some researchers have created therapeutic workplaces that successfully reinforced heroin and cocaine abstinence using a contingency management intervention (Aklin et al., 2014; Holtyn et al., 2014). Additionally, Koffarnus et al. (2013) found success of performance-based monetary incentives.

Identifying Reinforcers

In order to create reinforcing work environments and increase desired behaviors, reinforcers need to be identified. These reinforcers can vary among individuals, posing a problem for performance managers. How does one identify which items will be most reinforcing for each individual? The answer according to the research is stimulus preference assessments (SPAs). Several researchers have used and/or advocate the use of SPAs to determine valued rewards (Lattal, 2014; McGee & Johnson, 2015; Wine et al., 2014a; Wine et al., 2014b). Lattal (2014) explained a "great stepwise progression of analysis" which entails "asking people what they like", "observing behavior," and "testing a consequence" (p. 40). Da Fonte et al. (2016) described a three-step reinforcer identification framework consisting of a "preference inventory," a "choice-based assessment," and a "reinforcer assessment" (p. 393). There are various methods of conducting the initial preference inventory and several preference assessment methods including survey, ranking, and multiple stimulus without replacement (Wilder et al., 2005; Wine et al., 2014b).

Manager Prediction

One might assume that employee preferences would be easy to predict. However, the research shows that managers have trouble predicting what employees prefer (Wilder et al., 2007; Wilder et al., 2011). Wilder et al. examined managers' ability to accurately predict employee preferences in two trials (2007, 2011). The managers completed the SPAs for individual employees. The overall correlation for the first study was a mean of .11 and the replication was a mean overall correlation of .25 (Wilder et al., 2007; Wilder et al., 2011). Both are weak correlations showing that managers are poor at predicting employee preferences. Some of the managers could predict the most preferred items for some employees, but they were less

accurate at predicting low-preference items. Previous studies have found that identifying low-preference items may be beneficial (Wine & Axelrod, 2014). If managers do not know what their employees are willing to work for, they will have a hard time implementing plans to improve performance.

Money

Another assumption regarding workplace reinforcement is that money is always the best reinforcer, but Wine et al. (2013) found that employees have equally high preferences for alternatives to money. Managers may be counting unnecessary costs for performance enhancing interventions due to a belief that money or expensive items need to be used. A potential benefit to assessing employee preferences is finding alternative high-preference items that could save organizations money while increasing performance (Wine et al., 2013). Wine et al. (2013) did a study comparing relative preferences for generalized-conditioned reinforcers (GCRs) and other potentially reinforcing items. Popular GCRs include money and praise. They concluded "all participants... identified items other than money as high-preference items, suggesting that some items may serve as alternatives to money in terms of preference" (Wine et al., 2013, p. 244).

Preference Inventory

To conduct the SPAs, researchers need a list of potentially reinforcing items to present to participants. There are several ways to compile this list. For example, Wilder et al. (2007) and Wilder et al. (2011) created a list of potential items through informal interviews with managers. While this assures that the item can be implemented on a practical level, asking the managers rather than employees could limit results; one could rank a list of undesirable items and have the highest low-preference item at the top. Asking employees for their preferences in informal interviews, as other studies have done, may provide insight into items that are more desirable to

employees. Wine et al. (2014a; 2014b) conducted informal interviews with staff members not participating in the study and Wilder et al. (2005) conducted informal interviews with each participant to identify stimuli.

Stimulus Preference Assessment Methods

Many methods for assessing employee preferences are identified in the literature: survey, ranking, paired-choice (a.k.a. forced-choice), and multiple stimulus without replacement (MSWO). Even within these categories there are variations including using electronic pictures, videos, or physically tangible items (Brodhead et al., 2016; Clark et al., 2015). Previous studies have also used more than one method together, e.g., they gave both a ranking and survey to participants (Wilder et al., 2007; Wilder et al., 2011). Multiple articles compare methods to one another to determine which is most effective for identifying reinforcers (Morris & Vollmer, 2020; Verriden & Roscoe, 2016; Waldvogel & Dixon, 2008; Wine et al., 2014b). Wine et al. (2014b) compared three preference assessments: ranking, survey, and MSWO. The participants in this study were typically developing adult employees and every participant completed each of the three SPAs. Every potential reinforcer identified by the SPAs was found to function as a reinforcer. This means that these assessments are valid measures capable of identifying reinforcers. Next, the researchers asked participants to score each assessment on how well they liked it, how complex it was, and how likely they were to use it. They found that MSWO was least preferred, most complex, and least likely to be used. This method also took the longest amount of time.

SPAs are effective for identifying reinforcers, but they can also identify low preference items. Wine et al. (2014b) wrote, "Perhaps the value of preference assessments in OBM lies in detecting and excluding low-preference stimuli from performance improvement interventions

rather than identifying differentially effective high-preference stimuli" (pp. 14-15). Further suggestions for research were to explore return on investment for organizations and investigate how businesses administer incentives.

Current Project

Liberty University, while generous in offering rewards, implements no direct contingencies and has not tested for reinforcer preferences. Simonian et al. (2020) suggested many avenues for research: "establish whether organizations value the use of preference assessment methods and are likely to retain them as part of their regular business practices," "replicate the findings of previous studies and assess the various costs associated with conducting preference assessments, such as the number of staff required to implement the assessment and the time needed to conduct them," and "focus on extending the research to employees outside of the human services sector" (pp. 298, 299). Liberty University, a private Christian university, is a segment of the workforce that has not been studied in this way.

Based on the research, MSWO was ruled out as a method for the present study. The survey and ranking method are most suitable for the participants of this study. This study was done using the survey method, and without the verbal choice method. The author also opted to conduct the SPAs using an online assessment rather than an in-person verbal assessment. This study used a combination of the methods used in prior research to assess employee preferences: a survey plus a qualitative element akin to the informal interviews.

The current study did not include a reinforcer assessment. This was due to time constraints and the complexity of identifying target behaviors on which to make reinforcement contingent and implementing the delivery of potential reinforcers. This is considered a limitation of the study. However, previous research allows for a supported assumption that conducting

SPAs will accurately identify functional reinforcers (Wine et al., 2014b). Therefore, the results of this study are still relevant and useful for informing future intervention with this population.

The purpose of this study was to explore the preferences of employees in Liberty University's Department of Behavioral Sciences. The hypotheses were (1) potential reinforcers other than monetary reinforcers will be identified as high-preference items in a sample of faculty in Liberty University's School of Behavioral Sciences and (2) tangible items will be identified as low-preference items in a sample of faculty in Liberty University's School of Behavioral Sciences.

Method

Participants

Twenty-five participants were recruited from the faculty and staff in Liberty University's Department of Behavioral Sciences. The final count for started surveys was 25. Twenty-three participants answered at least one question in the survey. Roles of participants included assistant professor, associate professor, professor, and other.

Requesting Approval

The author of this project obtained permission from the Dean of the Department of Behavioral Sciences to conduct this study. Request approval can be found in Appendix A.

Following department approval, the author completed an IRB submission to assure ethical conduct of the project. The IRB decided the project could continue but it did not meet the qualifications for human subjects research because it consisted of quality improvement activities. Therefore, there was no ethical danger in continuing the project.

Recruitment

The first survey was sent out through a mass email to 85 addresses listed on Liberty University's Behavioral Sciences Department faculty and staff website on 3/24/2021 at 2:20 p.m. Delivery to two addresses failed. Following this email, 11 responses were recorded on the Qualtrics survey.

On 4/7/2021 at 11:29 a.m., the author sent a second recruitment email to the same 85 addresses thanking those who had participated and recruiting more participants. Once again, two messages failed to deliver. Following this email, 14 responses were recorded in Qualtrics. No more recruiting messages were sent but the survey remained open until June 22, 2021, at 4:08 p.m. Recruitment emails may be found in Appendix B.

Survey Creation

All data collection was conducted through Qualtrics, a web-based survey software tool. Two types of questions were included in a single survey provided to participants: a series of Likert scales and questions/comment sections. The inclusion of a series of Likert scales on the survey was based on a survey by Wine et al. (2013). The written portion allowed participants to explain their ratings and offer further insight into reinforcer preferences. There was also a single demographic question regarding the participant's role at Liberty University. The survey can be found in Appendix C.

Item Selection

Rather than conduct informal interviews, the author opted to borrow the items determined by previous research. The list of reinforcers from previous research was then narrowed down and categorized to make a concise survey. The author sorted items into four broad categories. The purpose of this was to appeal to as large a sample as possible by making the survey shorter and

thus more convenient. The four categories were *Monetary reward*, *Tangible reward*, *Recognition*, and *Time reward*. Each category was followed by a list of example reinforcers including the items from previous research as well as additional items the author thought applied to Liberty University's setting. Examples for Monetary rewards included "cash; gift cards for food, store, or activity; bookstore discount." Examples for Tangible rewards included "food, office supplies, t-shirt, laptop bag, thermos, campus sports tickets." Examples for Recognition included "public/private recognition from supervisor, public/private recognition from colleague." Examples for Time rewards included "day off, leave work 40 minutes early, temporary reserved parking." The rationale for including parking with *Time reward* was that having designated parking would save employees the time spent searching for parking. Cash, leave work 40 minutes early, preferred parking spot for a day, access to candy, and \$10 gift cards were items directly taken from or inspired by Wine et al. (2013).

Scoring

Prior research scored items "from 0 (do not like the item at all) to 4 (like the item very much)" and "Items scored as 3 or 4 were considered high-preference items" (Wine et al., 2013, p. 246). The current project contained Likert scales from 1 (extremely unlikely) to 5 (extremely likely), as a response to how valued the individual felt per reinforcer category. The author opted to narrow a high-preference designation to a score of 5 only rather than following the model of Wine et al. (2013) in which items scored as a 4 or 5 would be considered high-preference. One exception to this was a question about overall feelings of value which had a Likert scale from 1 (not at all valued) to 10 (completely valued).

Qualitative Analysis

Comments and short answers were coded by the author by hand on Excel with a sentiment and applicable topics. Sentiments included *Very Negative*, *Negative*, *Neutral*, *Positive*, *Very Positive*, and *Mixed*. The sentiments were coded based on attitude toward the item, not individuals' attitudes toward their reinforcement history. Hypothetically if a participant had written "I really hate that Liberty never gives out apple pies" the sentiment score would be *Very Positive* because the individual expresses great interest in having apple pies. The author opted not to include sentiment ratings for the short answer questions as the nature of the questions dictated sentiment. Some examples of topics included *Intentionality*, *Context*, and *Frequency*. Topics will be elaborated on in the Results section.

Results

Participants

Twenty-three participants answered at least one question in the survey. Eleven participants completed the entire questionnaire. Data was recorded on the Likert scale portion for 20 participants. Seventeen participants wrote at least two comments. Completion data is compiled in Table 1.

Of the 23 participants, nine were Professors, five were Associate Professors, seven were Assistant Professors, and two identified as Other. There was an answer choice of Staff that no participant chose. Breakdown of participant roles at Liberty University are shown in Table 2.

Descriptive statistics on the percentage of the survey completed by each participant and the time it took participants to complete the survey can be found in Table 3. The purpose of the attention to duration of time taken to complete the survey is to aid in assessing ease of application in a real-world setting.

Table 1

Completion_Categories

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	None	2	8.0	8.0	8.0
	First 1-2 Questions	3	12.0	12.0	20.0
	Likert Scales Only	3	12.0	12.0	32.0
	Likert Scales Plus Last Two	4	16.0	16.0	48.0
	80% Completion or Above	2	8.0	8.0	56.0
	Complete	11	44.0	44.0	100.0
	Total	25	100.0	100.0	

Table 2

Participant Roles at Liberty University

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Professor	9	39.1	39.1	39.1
	Associate Professor	5	21.7	21.7	60.9
	Assistant Professor	7	30.4	30.4	91.3
	Other	2	8.7	8.7	100.0
	Total	23	100.0	100.0	

Table 3

Statistics of Survey Completion Percentage and

Duration in Minutes

		Completion_Perc entage	Duration_Minutes
N	Valid	25	25
	Missing	0	0
Mean		69.3340	4.7153
Media	n	83.3300	2.6667
Mode		100.00	.35ª
Std. D	eviation	35.98143	6.24375
Range		100.00	28.67
Minim	ım	.00	.35
Maxim	um	100.00	29.02

^{a.} Multiple modes exist. The smallest value is shown

Overall Value

Twenty-two participants responded to the first Likert scale "On a scale from 1 to 10, how valued do you feel by Liberty?" The distribution of value ratings for all participants is shown in Figure 1. The mean value rating for all 22 participants was 7.32 with a standard deviation of 2.36. Median and mode were both 8. Scores ranged from a minimum of 2 to a maximum of 10. Descriptive statistics for the value ratings of the total sample and of each role designation can be found in Table 4.

How Valued Participants Feel

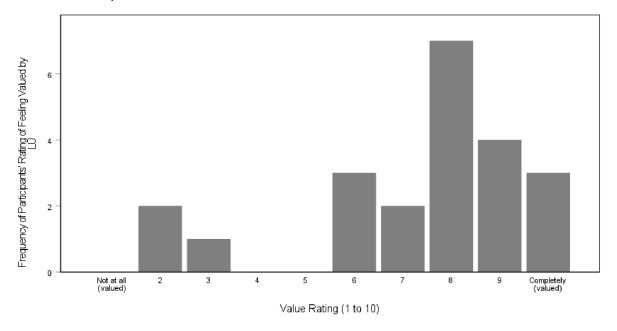


Figure 1. Bar chart of how valued individuals in Liberty University's Department of Behavioral Sciences feel on a scale from 1 (not at all) to 10 (completely).

Table 4

Descriptive Statistics of Overall Value Ratings

		Value	Assistant_Profess or_Value	Associate_Profes sor_Value	Professor_Value	Other_Value
И	Valid	22	7	5	8	2
	Missing	0	15	17	14	20
Mean		7.3182	6.5714	8.0000	7.3750	8.0000
Media	n	8.0000	8.0000	8.0000	8.0000	8.0000
\mathbf{M} ode		8.00	9.00	6.00ª	8.00	8.00
Std. D	eviation	2.35809	3.20713	1.58114	2.32609	.00000
Range		8.00	7.00	4.00	7.00	.00
Minim	um	2.00	2.00	6.00	3.00	8.00
Maxim	num	10.00	9.00	10.00	10.00	8.00

^{a.} Multiple modes exist. The smallest value is shown

High-Preference Categories

The survey assessment results indicated that across 20 participants, 17 item categories were marked as 5 on the assessment, indicating a high-preference designation. Recognition received the highest number of high-preference designations with a total of 8. Time was identified by four participants as a high-preference item. Table 5 shows the frequency of ratings of 5 for each reinforcer category.

Table 5

Number of 5 Designations per Reinforcer Category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monetary	3	17.6	17.6	17.6
	Tangible	2	11.8	11.8	29.4
	Recognition	8	47.1	47.1	76.5
	Time	4	23.5	23.5	100.0
	Total	17	100.0	100.0	

Monetary Comparison

Nineteen out of the 20 participants who completed the Likert scales for each category rated categories other than monetary as equal to or greater than monetary in value. The other one participant rated monetary items as a 5 and all other categories as a 4. The author of this project chose to narrow the scoring of high-preference items to 5 only. But under the scoring guidelines of Wine et al. (2013), all the categories are high preference for the single individual who did not rate monetary as less than or equal to other reinforcers. The findings of the current project align with previous research suggesting that alternatives to money may be useful as effective reinforcers in the workplace.

The mean ratings for the four categories were Tangible - 3.45, Time - 3.65, Monetary - 3.9, and Recognition - 4.05. Median and mode for all categories was 4. Standard deviations for each of the categories were Monetary - 0.79, Recognition - 1.05, Time - 1.14, and Tangible - 1.15.

Low-Preference Categories

The survey assessment results indicated that across 20 participants, three item categories were marked as 1 on the assessment, indicating a low-preference designation. Tangible rewards received the highest number of low-preference designations with a total of two. Time was identified by one participant as a low-preference item. Table 5 shows the frequency of ratings of 1 for each reinforcer category.

Table 6

Number of 1 Designations per Reinforcer Category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tangible	2	66.7	66.7	66.7
	Time	1	33.3	33.3	100.0
	Total	3	100.0	100.0	

Qualitative Analysis

Monetary

For question four, "any further comments on monetary rewards," there was a total of 13 comments. The highest sentiment was *Very Positive* with four comments. As expected, participants generally had positive things to say about monetary rewards such as, "Monetary rewards are highly valued."

The most frequently mentioned topic in the monetary comments was *Intentionality* with three comments. For example, one participant wrote, "It is good to be compensated with the monetary rewards, but they sometimes seem to be given as a show rather than as a valuing of

me." The second highest topic was *Raise* with two comments. One participant simply said, "A pay raise would be nice."

There was one *Very Negative* comment in the monetary comments. It read, "Working here long enough money wouldn't suffice at this point, it'd feel more like it's the easiest way to try and show value without actually showing value." This comment is also an example of the *Intentionality* topic. Furthermore, this comment brings up an interesting area of future study, reinforcement over time. This comment seems to suggest that, for this participant, the monetary reinforcers are sufficient or even preferred for some time but there is an expiration on its communication of value to the employee. Perhaps this is related to satiation and motivating operations. Table 7 shows the frequency of topics mentioned in Question 4 comments.

Table 7

Q4 Monetary Topics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	n∕a	3	8.6	20.0	20.0
	Raise	2	5.7	13.3	33.3
	Lunch	1	2.9	6.7	40.0
	Special	1	2.9	6.7	46.7
	Tangible	1	2.9	6.7	53.3
	Intentionality	3	8.6	20.0	73.3
	Working here long	1	2.9	6.7	80.0
	Bonus	1	2.9	6.7	86.7
	Discount	1	2.9	6.7	93.3
	Salary	1	2.9	6.7	100.0
	Total	15	42.9	100.0	
Missing	System	20	57.1		
Total		35	100.0		

Tangible

For question six, "any further comments on tangible rewards," there was a total of 13 comments. There were three comments each for the most frequent sentiments *Negative* and *Positive*. Two of the *Positive* sentiment comments were, "Since I am a faculty with LUO and work out of state, I would love to be gifted with a university polo shirt! That would be awesome!" and "Dept specific apparel."

The most frequently mentioned topics – all with two comments – were *Frequency*, *Apparel*, and *Context*. The *Frequency* topic once again brings up this idea of satiation. One participant stated explicitly, "If the tangible rewards are items that I have already received

frequently - the value goes down." Another simply stated, "I have enough LU swag." An example of the topic *Context* was "If I need it, otherwise it does become junk." Table 8 shows the frequency of topics in comments for Question 6.

Table 8

Q6 Tangible Topics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	n/a	4	11.4	26.7	26.7
	Fun	1	2.9	6.7	33.3
	Frequency	2	5.7	13.3	46.7
	Intentionality	1	2.9	6.7	53.3
	Apparel	2	5.7	13.3	66.7
	Specific	1	2.9	6.7	73.3
	LUO	1	2.9	6.7	80.0
	Related to work	1	2.9	6.7	86.7
	Context	2	5.7	13.3	100.0
	Total	15	42.9	100.0	
Missing	System	20	57.1		
Total		35	100.0		

Recognition

For question eight, "any further comments on recognition," there was a total of 11 comments. The most frequent sentiment was *Very Positive* with four comments. The second was *Mixed* with three comments. One *Very Positive* comment was, "Always great to get recognition and affirmation." A *Mixed* comment read, "Not interested in university level recognition, though affirmation from immediate supervisor or peer is always appreciated."

The most frequently mentioned topics were *Private* and *Supervisor* with three comments each. One participant's comment mentioned both topics: "I like private recognition (thank you notes from Dr. Knapp) but I don't like public recognition. Everyone else is made to feel bad if they are not recognized and may have done equal or greater accomplishments." Another wrote, "Individual recognition might seem more meaningful." Further comments on recognition included, "Recognition seems to be arbitrary and reserved for more valued individuals. That value may be based on relationship to administrators who dispense the recognition" and "The monetary gifts, etc [sic] in and of themselves don't communicate value. However, they do add up." The frequencies of topics mentioned for Question 8 can be found in Table 9.

Table 9

Q8 Recognition Topics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	n∕a	2	5.7	11.1	11.1
	Affirmation	1	2.9	5.6	16.7
	Comparison	1	2.9	5.6	22.2
	Prefer Private	3	8.6	16.7	38.9
	Public vs Private	4	11.4	22.2	61.1
	Arbitrary	1	2.9	5.6	66.7
	Relationship bias	1	2.9	5.6	72.2
	Frequency	1	2.9	5.6	77.8
	Monetary	1	2.9	5.6	83.3
	Meaningful	1	2.9	5.6	88.9
	Both public and private	1	2.9	5.6	94.4
	Environment	1	2.9	5.6	100.0
	Total	18	51.4	100.0	
Missing	System	17	48.6		
Total		35	100.0		

Time

For question ten, "any further comments on time rewards," there was a total of 12 comments. The most frequent sentiment was *Mixed* with four comments and the second was *Very Positive* with three comments. One *Mixed* comment said, "The parking spot would be a nice reward - but being on salary, time means nothing, I can work morning, afternoon and night grading, prepping, etc." Two *Very Positive* comments read, "Time off is an amazing reward," and "Very special!"

The most frequently mentioned topics were *Parking* and *On Salary* with two comments each. The nature of this organizational setting (i.e., education) is that there are not convenient ways to give extra time off. There is a certain amount of work that must be done every semester and roles in this setting generally are not hourly. Thus, as much as someone might like time off, it is not easily applicable. As one participant stated, "Reserved parking would be great. Time release has no value for academic work." Another stated that this was "Not as likely since we work remotely." One factor in creating effective reinforcement in the workplace is the ability of the organization to deliver those reinforcers sustainably.

Another issue addressed by a participant was communication. They said, "Time off is appreciated., [sic] though it is essential to communicate with professors ahead of time. Last minute surprises are disruptive to a course and can be stressful to accommodate - [sic] for both students and faculty." Once again, while time off may be valued, the nature of this setting makes it unlikely to be applied in a way that would ultimately make employees feel valued. Table 10 shows frequencies of topics mentioned in Question 10.

Table 10

Q10 Time Topics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	n/a	3	8.6	30.0	30.0
	Parking	2	5.7	20.0	50.0
	On Salary	2	5.7	20.0	70.0
	Timing	1	2.9	10.0	80.0
	Remote	1	2.9	10.0	90.0
	Context	1	2.9	10.0	100.0
	Total	10	28.6	100.0	
Missing	System	25	71.4		
Total		35	100.0		

What Type(s) of Items Do You Least Prefer?

For question eleven, "What type(s) of items do you least prefer," there was a total of 17 comments. The four most frequently mentioned topics were *Intentionality* with seven comments, *Tangible* with six comments, *Recognition* with four comments, and *Environment* with three comments. It would be inaccurate to assume that the most frequently mentioned topics equated an answer to the question (i.e., to assume that because *Tangible* and *Recognition* are among the top mentioned comments) they are the least preferred reinforcer categories. Therefore, these topic comments will be explored in greater detail below.

Intentionality was the most frequently coded topic and was mentioned across multiple reinforcer categories. Two comments regarding Intentionality were, "Things that signal we will 'give you this' because actually investing in you is too hard/time consuming," and "Low quality items that appear to be an after-thought." The first comment could either be monetary items or

tangible items while the second comment seems most likely to be tangible items. In any case, the aspect that is least preferred is a lack of thought or intention.

Tangibles do seem to be low-preference items for many participants. Some of the comments include, "tangible items such as gifts," "food," "I am not really a fan of Liberty office things," and "cold cups - [sic] I have many!! mugs - [sic] I have many!"

The comments about *Recognition* were mainly about intentionality. Two comments stated, "Seemingly arbitrary recognition" and "Broad statements" as least preferred items. The preference based on this comment would appear to be thoughtful and specific recognition. Furthermore, a participant explained their recognition preferences writing, "Effusive public praise would make me feel uncomfortable, but an email or a call to say that I had done something well is what I would like." So, through analysis it is reasonable to conclude that the manner through which recognition is delivered is low preference rather than recognition itself.

Two comments mentioned aspects related to the *Environment* and were not item choices. They said, "Statements 'you matter' when within moments our contracts can be taken away with no notice and colleagues being let go with no explanation or retirement or goodbye parties... nothing about that says 'you matter'" and "Threats (do this or else)." These responses are not directly within the scope of the preference assessment but are greatly related to reinforcement and performance management. The items in the preference assessment are being assessed in hopes of identifying positive reinforcers. In contrast there is Negative Reinforcement which increases a desired behavior by removing an aversive stimulus (Miltenberger, 2016). These comments relate to Negative Reinforcement tactics, the efficacy of which will be investigated in the Discussion section. Frequencies of topics mentioned in Question 11 are listed in Table 11.

Table 11

Q11 Least Preferred Topics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Recognition	4	11.4	13.8	13.8
	Tangible	6	17.1	20.7	34.5
	Balance	1	2.9	3.4	37.9
	Extra work	1	2.9	3.4	41.4
	Cups	1	2.9	3.4	44.8
	Frequency	1	2.9	3.4	48.3
	Intentionality	7	20.0	24.1	72.4
	Quality	1	2.9	3.4	75.9
	Monetary	1	2.9	3.4	79.3
	Food	1	2.9	3.4	82.8
	Environment	3	8.6	10.3	93.1
	Office things	1	2.9	3.4	96.6
	Growth opportunity	1	2.9	3.4	100.0
	Total	29	82.9	100.0	
Missing	System	6	17.1		
Total		35	100.0		

What Else Could Liberty University Do to Make You Feel Appreciated?

For question 12 "What else could Liberty do to make you feel appreciated," there was a total of 17 comments. The most frequently mentioned topic was *Recognition* with eight comments. Four comments mentioned *Communication*, and four mentioned *Connection/Community*. Three mentioned *Environment*.

Some of the *Recognition* comments read, "Invest in me and show individual appreciation/recognition for what I've done. Feel replacable [*sic*], like if I leave it wouldn't really matter" and "Verbal recognition in front of my peers."

Communication comments were "Clear and consistent communication with faculty.

Public appreciation for being 'front-line' staff who are responsible for providing what students come to college for...learning" and "Inform faculty of significant decisions BEFORE (or at least at the same time) as information is made public. Faculty are too often the last to hear information that directly impacts implementing residential courses - schedule, holidays, COVID precautions, change in policies, etc."

Comments regarding monetary incentives were, "To have their help paying for classes is phenomenal!!! I feel very appreciated with their help in earning degrees," and "Give a yearly or performance based Pay [sic] raise."

Further, comments related to appreciation were, "Place higher value on academic work and relationships with students, and on work/opinions of all rather than a privileged few," and "As faculty it would be nice to have preferred parking. We are the only school I know of where faculty competes with staff and students. [This is] Minor in the scope of things but does communicate value. Pay increases show value, of course. The most is school, department, etc. gratitude, appreciation, being treated well. Research supports those as well."

Participants additionally commented, "I would really enjoy having Liberty shirts, etc. that would help me feel connected to not just the university but also the community there," and "Communication and appreciation is conveyed well within the department, and although hierarchy at Liberty is biblical, having the school of behavioral sciences leadership engage with or recognize departments would be nice to know. We would like the chance to appreciate [and] to praise our department chair to someone without overstepping the social norms of the University."

Both participants who identified roles of *Other* wrote about autonomy: "Autonomy regarding decision making," and "Greater autonomy; recognition of individual needs/wants." Frequencies for topics mentioned in Question 12 are listed in Table 12.

Table 12

Q12 More Liberty Could Do Topics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monetary	2	5.7	5.7	5.7
	Performance	1	2.9	2.9	8.6
	Raise	2	5.7	5.7	14.3
	Not sure	1	2.9	2.9	17.1
	Tuition Assistance	1	2.9	2.9	20.0
	Recognition	8	22.9	22.9	42.9
	Communication	4	11.4	11.4	54.3
	Public	2	5.7	5.7	60.0
	Time/timing	1	2.9	2.9	62.9
	Autonomy	2	5.7	5.7	68.6
	Connection/community	4	11.4	11.4	80.0
	Apparel	1	2.9	2.9	82.9
	Tangible	1	2.9	2.9	85.7
	Relationship bias	1	2.9	2.9	88.6
	Environment	3	8.6	8.6	97.1
	Parking	1	2.9	2.9	100.0
	Total	35	100.0	100.0	

Total Topic Mentions

The author totaled all topic frequencies to determine the most frequently mentioned topics overall. Across all comments, the highest frequency topics were *Intentionality* and *Recognition*. The top nine most frequently mentioned topics and their counts can be seen in Figure 2. All participant comments and topic coding designations are available from the author upon request.

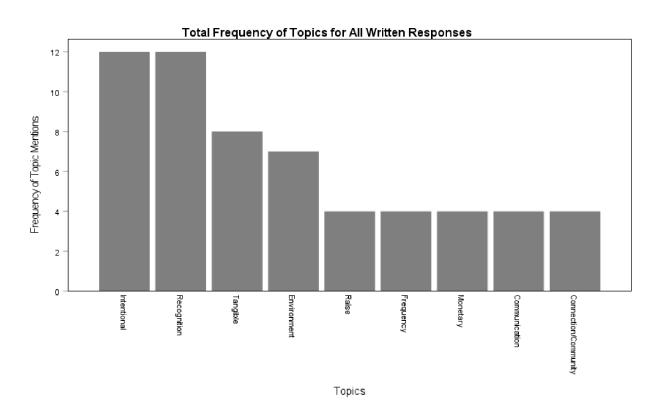


Figure 2. Bar chart showing frequency of topic mentions across all comments recorded in preference assessment survey of Liberty University Department of Behavioral Sciences faculty.

Discussion

The purpose of this project was to gain an understanding of the reinforcer preferences of Liberty University employees and how these preferences relate to current practices. The literature shows that preferred reinforcers lead to the greatest increase in target behaviors while least-preferred rewards can be detrimental to work performance. The data from this study specifically answered the research question. The hypotheses were (1) potential reinforcers other than monetary reinforcers will be identified as high-preference items in a sample of faculty in Liberty University's School of Behavioral Sciences and (2) tangible items will be identified as low-preference items in a sample of faculty in Liberty University's School of Behavioral Sciences. The hypotheses were tested using an online survey consisting of a series of Likert scales, comment boxes, and two short answer questions.

Hypothesis 1 was supported by the data. Monetary reinforcers were not the only high-preference items in this sample. Across 20 participants there were 17 high-preference ratings for the item categories. *Recognition* received the highest number of high-preference designations with a total of eight. *Time* was identified by four participants as a high-preference item. *Monetary* had three high-preference designations. Nineteen out of the 20 participants who completed the Likert scales for each category rated categories other than monetary as equal to or greater than monetary in value. The other one participant rated monetary items as a 5 and all other categories as a 4. The findings of the current project align with previous research suggesting that alternatives to money may be useful as effective reinforcers in the workplace (Wine et al., 2013).

Hypothesis 2 was supported by the data. Across 20 participants, there were three designations of reinforcer categories as *Extremely Unlikely* to make the employee feel valued.

Two of these were *Tangible* and one was *Time*. Thus, tangible items were indeed scored as low preference in this project. It should be recognized that the number of low designations is two people out of 20 which is the same number of people who scored tangible items as *Extremely Likely* to make them feel valued. Nevertheless, *Tangible* had the lowest possible preference score for two people which could affect their motivation. The low preference for tangible reinforcers is also supported by participant comments.

Tangible was the most frequently mentioned reinforcer category in response to Question 11, "What type(s) of items do you least prefer?" The assumption should not be made that it is the least preferred category based on this frequency. Afterall, recognition was mentioned second most but had the highest mean Likert score. The content of the comments regarding the topic *Tangible* were negative and addressed such matters as not liking office things, having received many items, and the quality of items received. In contrast, the comments regarding *Recognition* were more mixed including comments about preferences for private affirmation, praise from a supervisor, and public recognition of work.

Recognition was the most mentioned reinforcer category overall in the participant comments and specifically in response to Question 12, "What else could Liberty do to make you feel appreciated?" Recognition was mentioned eight times in Question 12 and 12 times overall. The data supports an assertion that Recognition is the most valued form of reinforcement for this sample of Liberty University Department of Behavioral Sciences faculty. Sleiman et al. (2020) studied format of delivery of feedback and praise. They found that the conditions under which praise is given influence the perception of and preference for praise. Multiple comments in the current study spoke of the intentionality of all potentially reinforcing items including

recognition. This reaffirms the idea that the method of delivery of reinforcers is as important as the item itself.

This project may serve as a first step of a progression for implementing reinforcement in Liberty University's School of Behavioral Sciences. Next steps could include identifying target behaviors or outcome goals on which to create contingencies. Current practices in the School of Behavioral Sciences do not include contingency management. Lattal (2014) discussed concepts of context and reinforcement in the workplace writing, "shifting demand for reinforcers with changes in cost and delays to access, have altered the way that we conceptualize reinforcement" (p. 40). This quote directly addresses participant comments on *Context* and the current state of reinforcement in the setting of the current study. In settings where the nature of the work does not allow for immediate reinforcement of specific target behaviors, the methods of reinforcement must be adjusted to be applicable and retain the desired outcomes.

Some strategies supported by the literature are performance feedback and goal setting. In the current study there were several comments about communication and recognition from supervisors, which is a type of performance feedback. Kazbour et al. (2013) did a study on performance-based methodology for transfer of training. While training transfer and the focus of the current study on general reinforcer preferences differ, both are based in behavioral science and the improvement of human performance. In their study Kazbour et al. (2013) wrote, "The three variables found most often in previous research on training transfer that overlap with performance-based methodologies are support, feedback, and goal setting" (p. 9). Several studies discussed strategies for increased communication and clear goals (Ángel Calderón Molina et al., 2014; Palmer & Johnson, 2013).

The findings of the current study do not reveal major problems with Liberty University's workplace strategies and in fact confirm that most employees feel valued. The goal of this study was not to pick apart the current system but to find possible areas for improvement supported by the literature. One strategy for motivating employees beyond minimum effort is the use of transitive conditioned motivating operations: "a stimulus that alters the value of some other stimulus and produces behaviors that will result in that other stimulus" (McGee & Johnson, 2015, p. 17). Others make similar assertions about motivating operations (Lattal, 2014; Palmer & Johnson, 2013). An example is a manager prompt which leads employees to look at a comparative performance sheet and see improvements in personal performance. This brings employee attention to something that they may value and work toward. The appeal of such a method is that it may produce discretionary effort such as "employees who work hard to see their own performance, because their managers have expressed appreciation for improvements" (McGee & Johnson, 2015, p. 17). According to the current study, faculty want appreciation for their efforts and such feedback is clearly supported by the literature.

A couple of participant comments regarded threats and a sense of replaceability. McGee & Johnson (2015) wrote, "Organizations that rely on reflexive conditioned motivating operations, such as those depending exclusively on managerial threats for motivation, may find themselves staffed with many employees who work just hard enough to remove the current threat and no more" (p. 17). For peak human performance and sense of value, threats are not the most effective. The principle of negative reinforcement explains why these strategies are effective and commonly used in organizations, but researchers claim that positive reinforcement can motivate employees to work beyond minimum requirements (Lattal, 2014; McGee & Johnson, 2015).

One participant comment mentioned that praise might sometimes be given to a select few based on personal relationships. Objectivity is another area of focus in this field of study.

Abernathy (2014) proposes a "Performance System Database" for "replacing a subjective performance appraisal system with an objective one" (p. 237). Abernathy (2014) describes how the system uses objective performance measures for individual job positions within an organization and is relatively easy to implement. The ease with which management can put interventions in effect is a huge consideration for applying behavioral science to the workplace. If it is not time and cost effective enough, managers are not likely to invest in it.

The current study was carried out by a single undergraduate student for no cost. Measures of time invested in creating, distributing, and reviewing the survey were not taken, so a time investment is not known. However, the time required of employees who take the survey averages less than five minutes. These points demonstrate that incorporating a reinforcer preference assessment into the workplace would be simple and convenient in addition to being useful.

Limitations

Some limitations of the current study were the small sample size, the consolidated format of reinforcer categories, the validity of self-report, the lack of a test for reinforcement, and the subjective nature of topics like intentionality. Previous research used individual items rather than categories to assess potential reinforcers. The author decided to categorize the potential reinforcers for a shorter survey and supplemented those scales with comment sections in hopes of garnering greater detail if time allowed for participants. The categorization is a weakness in the study because specific items have varying value to employees within categories and grouping items together removes specificity of results.

Self-report measures are notoriously questionable when it comes to objectivity. It is possible that participants' perceptions of how valued they would feel from certain items would not align with the reality of receiving said item. Leading to the next limitation, there was no objective test of the reinforcers identified to confirm that the items would have the desired effect. As stated in the Literature Review, there are articles that have found stimulus preference assessments can identify functional reinforcers. However, these were done with different surveys and in a different population.

The reinforcer preference assessment is one step in a progression of identifying functional reinforcers. While evidence supports the efficacy of preference assessments in identifying reinforcers, confirmation can only be gained through a reinforcer assessment in which trials are done with target behaviors and delivery of reinforcers (Wine et al., 2014b). No reinforcer assessment was done in this study, so the preferences identified remain theoretical.

Finally, some of the topics discussed in this study do not lend themselves easily to clear definitions or objective measures. Intentionality is one such word that is difficult to define universally. It is quite possible that individuals perceive intentionality from different actions. Meaningfulness is another topic heavily related to the sentiments in the current study that is equally hard to measure objectively. Bailey et al. (2019) attempted to define meaningfulness, described the subjectivity of the concept, and discussed implications in the workplace.

Future Research

The author proposes future research be done with this population of faculty and staff at Liberty University to continue the stepwise progression of reinforcer identification. This includes objective testing of reinforcers, observation of behavior, and identification of outcome goals (Da Fonte 2016; Lattal, 2014). Additional research should also be done with a greater sample size

including more faculty and staff. Another area of study could be strategies to offer time off in work settings, like higher education, that do not allow for simple methods. Furthermore, a study of the differences in reinforcer preferences for various roles and salary levels, the reinforcer preferences of employees over time spent with an organization, and the potential reinforcement of choice itself in receiving incentives could be done. Regarding time spent with an organization, there were a couple comments that mentioned the amount of time an employee had been working in the department influenced their perception of the value of potential reinforcers. Several articles have explored the reinforcing capabilities of choice itself (Ackerlund et al., 2015; Rost et al., 2014; Rost, 2018). Future research could explore the value of choice in an educational organization.

Conclusion

Twenty-three members of Liberty University's Department of Behavioral Sciences participated in a reinforcer preference assessment. The mean rating for individuals' overall sense of value on a scale from 1 to 10 was 7.32. The reinforcer category with the most high-preference ratings was *Recognition* with a total of 8. *Time* had the second most with four high-preference ratings. Nineteen out of the 20 participants who completed all five Likert scales rated categories other than *Monetary* as equal to or greater than *Monetary* in value. The reinforcer category with the most low-preference ratings was *Tangible* with a total of two, followed by *Time* with one low-preference rating.

Comments about *Monetary rewards* were mostly *Very Positive* and included topics of *Intentionality* and a *Raise*. Comments about *Tangible rewards* included both *Positive* and *Negative* sentiment, including topics of *Frequency, Apparel*, and *Context*. Comments about *Recognition* were mostly *Very Positive* with a few *Mixed* comments. Topics for this category

include *Private* and *Supervisor*, referring to the type of recognition most preferred. Comments about *Time rewards* were mostly *Mixed* and *Positive* with topics of *Parking* and *On Salary*.

Parking was viewed favorably and being on salary was seen as a hindrance to effective time rewards. Topics most often mentioned in comments about least-preferred items in order of frequency were *Intentionality*, *Tangible*, *Recognition*, and *Environment*. Participants generally disliked a lack of intentionality for any type of item and mostly disliked tangible items.

Comments on *Recognition* were mostly related to *Intentionality*. *Environment* comments were related to feelings of threat or replaceability. Comments about what else Liberty could do for participants to feel appreciated included *Recognition* with eight comments, followed by *Communication*, *Connection/community*, *and Environment* with four comments, four comments, and three comments respectively. Over the entire survey, the most frequently mentioned topics were *Intentionality* and *Recognition*.

This project supports prior findings that reinforcers other than monetary are highpreference items. Tangible items were found to be least preferred among Liberty University

Department of Behavioral Sciences faculty. Additionally, the author proposes that the created survey is a useful and cost-effective tool for the identification of preferred reinforcers and potential areas of improvement for educational organization settings. The survey took participants an average of less than five minutes to complete, and the median was less than three minutes. The cost of an online survey is minimal. The findings from the survey are that faculty from this sample desire more intentional recognition for their hard work. The author acknowledges that Liberty University is generous in offering rewards to its employees, and employees are already hardworking and productive individuals. Yet there is always room for improvement and this project outlines potential next steps.

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Appendix A

Approval Letter from the Dean of the School of Behavioral Sciences

February 16, 2021

Dear Sarah,

After careful review of your research proposal entitled "Reinforcer Preference of Liberty University Professors", I have decided to grant you permission to contact our faculty/staff and invite them to participate in your study.

Sincerely,



Dean
School of Behavioral Sciences
(434) 582-2697



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Appendix B

Recruitment Emails

Honors Thesis Project

As a student in the School of Behavioral Sciences at Liberty University, I am conducting a project to complete the honors thesis for an honors psychology degree. Its purpose is to better understand the reinforcer preferences of faculty and staff at Liberty University, and I am writing to invite you as an eligible participant to join my study.

Participants must be 18 years of age or older and working in the School of Behavioral Sciences at Liberty University. Participants, if willing, will be asked to complete a survey about preferences for reinforcers in the workplace. It should take approximately 10 minutes to complete the survey. Participation will be completely anonymous, and no personal, identifying information will be collected.

In order to participate, please click the link to the Qualtrics survey: Reinforcer Preference Assessment

Sincerely,

Sarah Stoker

Re: Honors Thesis Project

Stoker, Sarah B <sstoker@liberty.edu>

Wed 4/7/2021 11:29 AN

To:
Du
Stu
R (//
Co

Dear Faculty or Staff Member of the School of Behavioral Sciences:

I am an undergraduate student in the School of Behavioral Sciences and would greatly appreciate your participation in my Qualtrics survey; Reinforcer Preference Assessment

It should take less than 10 minutes. Participation will be completely anonymous, and no personal, identifying information will be collected.

The project is part of my honors thesis and is about your reinforcer preferences as a faculty/staff member of Liberty University.

Thank you to those who have already participated.

Sincerely,

Sarah Stoker

Appendix C

Survey: Reinforcer Preference of Liberty University Professors

Default Question Block

Intro

Title of the Project: Reinforcer Preference of Liberty University Faculty and Staff

Principal Investigator: Sarah Stoker

Invitation to be Part of a Project

You are invited to participate in a project for an honors thesis. In order to participate, you must be 18 or older and a faculty or staff member in the School of Behavioral Sciences at Liberty University. Taking part in this project is voluntary and totally anonymous.

Please take time to read this entire form and ask questions before deciding whether to take part in this project.

What is the study about and why is it being done?

The purpose of the study is to gain understanding about the reinforcer preferences of Liberty employees and how these preferences relate to current practices.

What will happen if you take part in this study?

1. Complete an online survey about reinforcer preferences. The study will require approximately 10 minutes.

How will personal information be protected?

This study is anonymous, and the records of this study will be kept private. You will not be identified by department or name.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time prior to submitting the survey without affecting those relationships.

Appendix C (continued)

What should you do if you	decide to	withd	raw fro	m the st	udy?					
If you choose to withdraw fr	om the st	tudy, ple	ease exit	the surv	ey and o	close you	ur intern	et brows	er. Yo	ur responses
will not be recorded or inclu	ded in the	e study.								
Whom do you contact if yo	u have q	uestion	s or con	icerns al	bout the	study?	•			
The researcher conducting the	nis study	is Sarah	Stoker.	If you h	ave que	stions at	any poi	nt, you a	re enc	ouraged to
contact her at	. Yo	ou may	also con	tact the	research	er's facu	ılty spor	isor, Dr.	Sites, a	at
*										
Block 1										
I understand that Liberty Univ The aim of this survey is to ur following questions thoughtful	nderstand									
Which of the following	best de	scribe	s your	role at	Liberty	/?				
Staff										
Assistant Professor										
Associate Professor										
Professor										
Other										
On a scale from 1 to 10), how \	/alued	do you	u feel b	y Libe	rty?				
	1 -									40
	not at all	2	3	4	5	6	7	8	9	10 - completely
Valued	0	0	0	0	0	0	0	0	0	0
		_	_							_
How likely are you to fe	eel valu	ed who	en give	en the f	ollowin	ng item	s?			
		emely ely		mewhat likely		ther like runlikel	100	omewh unlikely		Extremely unlikely
Monetary reward (e.g., cash; gift cards for food, store, or activity; bookstore discount)	(0		0		0		0		0

Appendix C (continued)

Any further comments on monetary rewards:							
					,		
How likely are you to fe	el valued whe	n given the fo	llowing items?				
	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely		
Tangible reward (e.g., food, office supplies, t- shirt, laptop bag, thermos, campus sports tickets)	0	0	0	0	0		
Any further comments of	on tangible rev	wards:					
					//		
How likely are you to fe	el valued whe	n given the fo	llowing items?				
	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely		
Recognition (e.g., public/private recognition from supervisor, public/private recognition from colleague)	0	0	0	0	0		
Any further comments of	on recognition	:					

Appendix C (continued)

How likely are you to fee	el valued whe	n given the fo	llowing items?		
	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely
Time reward (e.g., day off, leave work 40 minutes early, temporary reserved parking)	0	0	0	0	0
Any further comments or	n time reward	ls:			
What type(s) of items do	you least pre	efer?			/
What else could Liberty	do to make yo	ou feel appred	ciated?		