

## Developing a General Scale for Testing the Amount of the Individual's Susceptibility to Performance Contagion

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### Abstract

Performance contagion is an environmental influential factor that leads to change in the performance of a person who is susceptible to contagion. For the purpose of constructing a conceptual model of employees' susceptibility to job performance contagion, a general scale for testing the amount of the individual's susceptibility to performance contagion was developed in the present study. This scale was used in developing a questionnaire. Then the questionnaire was distributed to the 187 non-teaching staff of the Science and Research branch of Islamic Azad University and its validity, reliability, construct- related evidence and content- related evidence were studied.

**Keywords:** *contagion, job performance, performance contagion, susceptibility to performance contagion*

### Introduction

Contagion has been defined as the proliferation of similar attitudes, affect, and behavior among members of a group. This process occurs unintentionally, with similar attitudes, affect and behaviors being passed from one individual to the next, often spontaneously and without conscious awareness (Levy & Nail, 1993). Social contagion is different from obedience, compliance, or other forms of social learning, since in social contagion individuals may also converge but because of

the social influence attempts of others. Various studies have been conducted in this field.

Table 1 presents the main studies in the contagion field that have a usable approach in organizational studies.

**Table 1.** The main studies in the contagion field

Authors	Subject of study	Area of study
Pugh (2001), Barger & Grandy (2006)	Contagion in customer serving	Behavioral contagion
Hatfield, Cacioppo & Rapson (1992, 1994)	Facial expressions, physical posturing, moods and emotions (determining the relationships among emotional susceptibility and personality, experience and gender)	Emotional contagion
Aarts, Golwizer & Hassin (2004)	Goal per suiting (determining the relationship between individual characteristics)	Goal contagion- Behavioral contagion
Howard & Gengler (2001)	a. the effect of the mood of the sender on the mood of the receiver b. the relationship between the affect of the receiver and sender	Attitude contagion
Chartrand & Bargh (1999)	Behavioral mimicry	Behavioral contagion
Sy et al. (2005)	The impact of changes in a leader's mood on his or her group members' mood	Behavioral contagion
Anderson et al. (2003)	a. presence of emotional convergence over time in existing romantic and roommate relationships b. relationship between gender and relation power (status) and convergence c. benefits of similarity	Behavioral contagion
Savell, Teague & Tremble Jr (1995)	Top – down contagion by using a real-world military sample of US army	Behavioral contagion
Tepper & Tylor (2003)	Relationship between a supervisor's perception of procedural justice on OCB	Attitude- Behavioral contagion
Snodgrass et al. (1992)	Relationship between power and status position and emotion contagion	Emotional contagion
Connelly et al. (2002)	The impact of a leader's mood on his or her subordinates	Emotional/Behavioral contagion
Loersch et al. (2011)	Goal contagion and its relationship with personal characteristics and job rank	Goal contagion
Ahmadi & Mirsepasi (2010)	Job performance contagion	Emotional/Behavioral contagion

## **Performance Contagion**

The assumption of theory and research on contagion is that the feelings and behavior of a member may influence (or be influenced by) the performance of other members of an organization. This phenomenon has been interpreted as performance contagion and it is one of the environmental factors that influence an individual's performance and ultimately the performance of the overall organization. Performance contagion is an individual's emotional-behavioral reaction to the performance of a person or a group in close contact with him or her that leads to a kind of relatively unconscious, automatic conformity (Ahmadi & Mirseppasi, 2010).

Therefore, performance contagion is an environmental influential factor that leads to change in the performance of a person who is susceptible to contagion. In fact, the result of performance contagion can be recognized in the performance of the individual who is susceptible to this phenomenon.

It was necessary to define and develop a scale for measuring the amount of one's susceptibility in order to develop the performance contagion construct as well as to identify its influential factors. Thus, one of the objectives of the present study was to define and develop a qualitative scale for measuring the amount of a person's susceptibility.

Developing this scale as a scientific and practical step can be helpful in the present study as well as other studies related to this phenomenon.

The researchers tried to develop a qualitative scale in the form of questionnaire in order to determine the amount a person's susceptibility to job performance contagion. Various performance scales (Campbell et al., 1993; Borman & Motowidlo, 1993; Welbourne et al., 1998; Johnson, 2003; Borman et al., 2001; Podsakoff et al., 2000; Pulakos et al., 2000; Morrison & Phelps, 1999; Parker et al., 2006; Frese & Fay, 2001) had been studied so as to develop this questionnaire.

Finally, among these scales, a role-based performance scale (Welbourne et al., 1998) was used to develop the study scale due to its generality and comprehensiveness.

## **Role-Based Performance Scale (RBPS)**

Welbourne's role-based performance scale included five groups of job performance roles: job holder role, career role, organization member role, innovator role and team member role. Each of these groups has its own sub-scales. Figure 1 shows this scale.



Figure 1. Role-based performance scale (Welbourne, 1998)

## Scale of Susceptibility to Performance Contagion

There was a need to classify individuals by their susceptibility to job performance contagion in order to explain this phenomenon as well as to test hypotheses. In turn, this classification created a need for developing a susceptibility measurement scale. We used this scale to classify individuals according to their amount of susceptibility as well as to investigate the relationship between the amount of susceptibility and variables such as gender, personality, job performance, education level, job rank, perception of job security, and other personal or environmental variables.

Different performance scales had been studied in order to develop the study questionnaire and the role-based performance scale (Welbourne, 1998) was used to develop the research scale due to its comprehensiveness and the generality of its sub-scales. Using the mentioned scale, the sub-scales of performance contagion were developed. Figure 2 shows these elements. In our questionnaire two questions were raised for each sub-scale of performance contagion (One question for testing negative performance contagion and another one for positive performance contagion). Table 2 gives further information about the study questionnaire. It should

be mentioned that in order to develop the study questionnaire, we consulted and interviewed experts in the human resource field as well as industry managers. In order to evaluate the validity of the study questionnaire, it was presented to fifteen experts who are university teachers and human resource managers and have experience in the performance management field and are familiar with behavioral contagion. Fourteen experts confirmed the questionnaire after some minor changes.



Figure 2. Performance contagion sub-scales according to Welbourne's role-based performance scale

**Table 2.** Questions of the questionnaire according to sub-scales and items

Scale	Sub-scale	Items	Question number
Susceptibility	Positive susceptibility	Job performance	3,8,10,16,42
		Career performance	11,14,28,29
		Innovative performance	18, 22, 23
		Team performance	38, 35
		Organizational performance	37, 31
	Negative susceptibility	Job performance	5, 12, 13, 41, 43
		Career performance	20, 23, 27, 19
		Innovative performance	15, 30, 34
		Team performance	36, 32
		Organizational performance	40, 39
Job security perception			17
The amount of awareness of other employees' performance			21
Gender			Demographic questions
Personality			Personality questionnaire (MBTI)
Job experience			Demographic questions
Job rank			Demographic questions

## **Methodology**

The target population of the study was the non-teaching staff of the Tehran Science and Research branch of Islamic Azad University. The method of sampling was random-stratified. Therefore, respondents were chosen randomly and in a proportionate manner regarding the number of the employees of each unit. Cochran's (1977) formula was used to calculate the sample. By putting 351 as population, the sample equals 183. The questionnaires were distributed in units according to the frequency percentage in the population. At this stage, information of the units and employees was collected via administrative management. Data were collected with the use of a self-report questionnaire. A total number of 204 questionnaires was distributed, but 187 usable questionnaires were returned and analyzed. Among the respondents, 102 were male and 85 were female and 45 had management posts. Regarding the education level, 34 respondents had a high school diploma, 120 had bachelor's degree, 26 had a master's degree and 7 had PhD. 120 respondents had between 1 to 10 years of work experience and 48 had 10 years or more of work experience.

**Table 3.** Population and sample on the basis of units

Units	Population	Sample	Number of distributed questionnaires	Number of collected questionnaires
Student affair unit	91	47	51	48
Educational unit	42	22	23	23
Cultural unit	15	8	12	9
Administrative and Financial unit	103	54	58	55
Project and IT unit	82	42	45	41
Construct unit	12	7	10	8
Management	6	3	5	3
Total	351	183	204	187

### **Validity and Reliability Test**

In order to develop the study questionnaire, we consulted and conducted interviews with human resource experts as well as industry managers. After preparing the primary version of the questionnaire, the test of content validity was given to 15 experts. The experts are university teachers as well as human resource managers that have executive experience in the performance management field and are familiar with behavioral contagion. The model fit was estimated by executing confirmatory and exploratory factor analyses. Reliability was established by means of Cronbach's alpha and the value was .76, which shows that the reliability of the scale is acceptable.

### **Results of Confirmatory Factor Analyses and Determining the Model Fit**

The model fit was determined by conducting confirmatory factor analyses. The analyses were made by LISREL. Table 4 shows the results.

**Table 4.** Indicators of the model fit

The fit statistics	Result
$\chi^2$	154.15
Degree of freedom (df)	395
Root mean square error of approximation (RMSEA)	zero

The fit statistics	Result
Root mean square residual (RMR)	.17
Normed fit index (NFI)	.95
Not normed fit index (NNFI)	1.09
Comparative fit index (CFI)	1.00
Goodness of fit index (GFI)	.56
Incremental index of fit (IFI)	1.08
Adjusted Goodness of Fit Index (AGFI)	0.48

The first indicator of model fit is  $X^2$ .  $X^2$  tests the assumption that the mentioned model is in harmony with co-variation among the studied variables. Smaller values show more fitness of the model. The ratio of  $X^2$  to the degree of freedom is .39 and it is in accordance with the criteria suggested by Bayer (1989) and Bentler (1993), according to which the appropriate value is smaller than 2. Therefore, we came to the conclusion that the test confirms the model fitness. The root mean square error of approximation (RMSEA) is zero and its upper bound is smaller than .05 and if we compared it with .008 suggested by Browne and Cudeck (1989, 1993) as the largest accepted value, we would conclude that the model fit is acceptable. Another indicator is the root mean square residual (RMR), which in this model equals .17, which is small and indicates a small amount of error and acceptability of the model fit.

As finding a model with good fitness does not show that this model is the only satisfactory one and there are various indicators of the model fit, it should be tested simultaneously by multi-indicators. According to the above table, the normed fit index (NFI), not normed fit index (NNFI), comparative fit index (CFI) and incremental index of fit (IFI) equal at least .87 and more, which shows the model fitness.

## **Conclusion**

The presented study sought to enrich our understanding of performance contagion by identifying and proposing a conceptual model. And in order to accomplish this objective, a general scale for determining the amount of susceptibility to performance contagion was developed. The mentioned scale was utilized to develop the study questionnaires. We distributed the questionnaires among 187 non-teaching staff of Tehran Science and Research branch of Islamic Azad Univer-



sity and ran reliability as well as content and construct validity tests. The results of these tests ensured that the model fit was acceptable. By this scale, we can classify individuals according to the amount of susceptibility and examine the relationship between the amount of susceptibility and variables such as gender, personality, job experience, education level, job category, job security perception, and other personal or environmental variables. Moreover, by the studying performance contagion model (Ahmadi & Mirseppasi, 2010), the role of the mentioned scale as the basis for other studies becomes more clear.

## **Limitations**

We feel that we should point out certain limitations of this work, in describing these limitations we suggest directions for future inquiry. First, the study includes a specific location (Tehran Science and Research branch of Islamic Azad University) only and using a sample in a single institution could not warrant the generalizability of the findings. Future research should study this phenomenon in different institutions and different geographical areas. Second, the data were collected with the use of self-report measures causing concern about possible mono-method bias, so future research efforts should incorporate alternative designs. Finally, the study is based on cross-sectional data and we examined the employees' susceptibility to performance contagion only in one point in time. Therefore, future research efforts need to consider using longitudinal data as well as focusing on multi-source data.

## **References:**

- Aarts, H., Gollwitzer, P.M., & Hassin, R.R. (2004). Goal contagion: Perceiving is for pursuing. *Journal of Personality and Social Psychology*, 87, 23–37.
- Ahmadi, F. & Mirseppasi, N. (2010). Performance contagion and human research layout: New concept in performance management. *Performance Improvement Journal*, Vol.49, No. 1, 25–33.
- Anderson, C., Keltner, D., & John, O.P. (2003). Emotional convergence between people over time. *Journal of Personality and Social Psychology*, 84, 1054–1068.
- Barger, P.B., & Grandey, A.A. (2006). Service with a smile and encounter satisfaction: Emotional contagion and appraisal mechanisms. *Academy of Management Journal*, 49, 1229–1238.
- Bentler, P.M. (1993). *EQS structural equation program manual*. Los Angeles, CA: BMDP statistical software.

- Borman, W.C., & Motowidlo, S.J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt & W.C. Borman (Eds.), *Personnel selection in organizations*, 71–98. San Francisco: Jossey-Bass.
- Borman, W.C., & Motowidlo, S.J. (1997). Task performance and contextual performance: The meaning for personnel selection research. *Human Performance*, 10(2), 99–109.
- Browne, M.W.; Cudeck, R., (1989). Single sample cross-validation indices for covariance structures. *Multivariate Behav. Res.*, 24 (4), 445–455
- Browne, M.W.; Cudeck, R., (1993). Alternative ways of assessing model fit. *Sociologic. Meth. Res.*, 21 (2), 230–258
- Burns, T., & Stalker, G. 1961. *The management of innovation*. London: Tavistock.
- Campbell, J.P., McCloy, R.A., Oppler, S.H., & Sager, C.E. 1993. A theory of performance. In N. Schmitt, W.C. Borman, and associates (Eds.), *Personnel selection in organizations*: 35–69. San Francisco: Jossey-Bass.
- Campbell, J.P., McCloy, R.A., Oppler, S.H., & Sager, C.E. 1993. A theory of performance. In N. Schmitt, W.C. Borman, and associates (Eds.), *Personnel selection in organizations*: 35–69. San Francisco: Jossey-Bass.
- Chartrand, T.L., & Bargh, J.A. (1999). The chameleon effect: The perception–behavior link and social interaction. *Journal of Personality and Social Psychology*, 76, 893–910.
- Cochran, William G. (1977). *Sampling Techniques* (Third ed.). Wiley. ISBN 0–471–16240-X.
- Connelly, S., Gaddis, B., & Helton-Fauth, W. (2002). A closer look at the role of emotions in transformational and charismatic leadership. In B.J. Avolio & F.J. Yammarino (Eds.), *Transformational and charismatic leadership: The road ahead*, Vol. 2, 255–283. Amsterdam: Elsevier.
- Frese, M., & Fay, D. 2001. Personal initiative: An active performance concept for work in the 21<sup>st</sup> century. In B.M. Staw & R.L. Sutton (Eds.), *Research in organizational behavior*, vol. 23: 133–187. Greenwich, CT: JAI Press.
- Hatfield, E., Cacioppo, J., & Rapson, R.L. (1994). *Emotional contagion*. New York: Cambridge University Press.
- Hatfield, E., Cacioppo, J.T., & Rapson, R.L. (1992). Primitive emotional contagion. in M.S. Clark (Ed.), *Review of personality and social psychology*, vol. 14, 151–177. Newbury Park, CA: Sage.
- Howard, D.J., & Gengler, C. (2001). Emotional contagion effects on product attitudes. *Journal of Consumer Research*, 28, 189–201.
- Johnson, S.K. (2008). I second that emotion: Effects of emotional contagion and affect at work on leader and follower outcomes. *The Leadership Quarterly* 19, 1–19
- Johnson, J.W. (2003). *Toward a better understanding of the relationship between personality and individual job performance*. In M.R. Barrick & A.M. Ryan (Eds.), *Personality and work*: 83–120. San Francisco: Jossey-Bass.
- Levy, D.A. & Nail, P.R. (1993). *Contagion: A theoretical and empirical review and reconceptualization*. *Genetic, Social & General Psychology Monographs*, 119, 235–285.

- Loersch, C., Aarts, H., Payne, B.K., & Jefferis, V.E. The influence of social groups on goal contagion. *Journal of Experimental Social Psychology* (UNDER PRESS)
- Morrison, E.W., & Phelps, C.C. (1999). Taking charge at work: Extra-role efforts to initiate workplace change. *Academy of Management Journal*, 42: 403–419.
- Motowidlo, S.J. (2000). Some basic issues related to contextual performance and organizational citizenship behavior in human resource management. *Human Resource Management Review*, 10, 115–126.
- Motowidlo, S.J. & Van Scotter, J.R. (1994). Evidence that task performance should be distinguished from contextual performance. *Journal of Applied Psychology*, 79(4), 475–480.
- Parker, S.K. (2000). From passive to proactive motivation: The importance of flexible role orientations and role breadth self-efficacy. *Applied Psychology: An International Review*, 49: 447–469.
- Parker, S.K., Williams, H., M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology*, 91: 636–652.
- Podsakoff, P.M., MacKenzie, S.B., Paine, J.B., & Bachrach, D.G. (2000). Organizational citizenship behaviors: Critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, 26: 513–563.
- Pugh, S.D. (2001). Service with a smile: Emotional contagion in the service encounter. *Academy of Management Journal*, 44, 1018–1027.
- Pulakos (Eds.), *The changing nature of performance* (2007). Griffin, Neal, and Parker 345: Implications for staffing, motivation, and development: 21–55. San Francisco: Jossey-Bass.
- Pulakos, E.D., Arad, S., Donovan, M.A., & Plamondon, K.E. (2000). Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology*, 85: 612–624.
- Savell, J.M., Teague, R.C., & Tremble, Jr., T.R. (1995). Job involvement contagion between army squad leaders and their squad members. *Military Psychology*, 7, 193–206.
- Snodgrass, S.E. (1992). Further effects of role versus gender on interpersonal sensitivity. *Journal of Personality and Social Psychology*, 62, 154–158.
- Sy, T., Côté, S., & Saavedra, R. (2005). The contagious leader: Impact of the leader's mood on the mood of group members, group affective tone, and group processes. *Journal of Applied Psychology*, 90, 295–305.
- Tepper, B.J. & Taylor, E.C. (2003). Relationships among supervisors' and subordinates' procedural justice perceptions and organizational citizenship behaviors. *Academy of Management Journal*, 46, 97–105.
- Welbourne, T.M., Johnson, D.E., & Erez, A. (1998). The role-based performance scale: Validity analysis of a theory-based measure. *Academy of Management Journal*, 41: 540–555.
- Welbourne, T. & Cable, D. (1995). Group incentives and pay satisfaction: Understanding the relationship through an identity theory perspective. *Human Relations*, 48(6), 711–726.